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London Printing Trade Troubles

READERS of *The Railway Gazette* and of other journals printed in London in recent weeks will have had ample evidence that all has not been well in the London printing trade. As long ago as May 18 the London Society of Compositors imposed a ban on overtime working by its members after failure to agree on a wage claim. In June the National Arbitration Tribunal awarded the compositors an increase of 3s. 6d. to take effect when the ban on overtime was lifted. The ban was continued, and towards the end of August the London Society of Compositors introduced a system of restrictions on normal working which the master printers found crippling. They dismissed some 3,000 compositors who would not undertake to cease these restrictions, and as a result, the printing of many weekly journals and other publications was interrupted, or, as was the case with *The Railway Gazette*, continued only in the greatest difficulty, in simplified format, and late in publication. We had hoped by now that conditions would have returned to normal, for on September 13 agreement to resume ordinary working was reached through the intervention of the Printing & Kindred Trades Federation. Unfortunately, however, there was a breakdown in the resumed negotiations between the London master printers and the London Society of Compositors on September 20, and as a result the ban on overtime and the restrictive practices were re-introduced as from the afternoon of September 21. We deeply regret the inconvenience which has been occasioned our subscribers and advertisers as a result of a dispute to which we are not a party. We greatly appreciate the forebearance and co-operation which they have accorded us and we hope that it will not be long before we are able to resume our normal services.

The Pan-American Railway Congress

THE seventh session of the Pan-American Railway Congress is to be held for the first time in Mexico City from October 10 to 20. The Congress resembles the International Railway Congress in that its deliberations on railway topics are mainly academic and the resolutions passed not binding on participating administrations. Unlike the International Union of Railways and other international railway organisations of the old world, it is not a functional body, nor, as far as is known, in any way connected with the United Nations or with the Inter-Continental Railway Commission of the Pan-American Conference. It is the concern mainly of railway officials in South and Central America, where interest in railway technical problems has been growing for some years, and seems to have arisen from the desire to enlarge the scope of railway associations in the various republics, such as the Brazilian Railway Engineering Association. The National Railways of Mexico, where construction of a new trunk line is in progress, are for that reason particularly suited to be the host administration this year. All railwaymen will wish the Congress a fruitful and enjoyable session.

British Transport Commission Statistics

THE figures for the seventh statistical period of the year for the British Transport Commission show that total traffic receipts rose by some 10 per cent. compared with 1949, and that of these, British Railways receipts rose 5 per cent.; road freight haulage by nearly 80 per cent., and road passenger transport by 6 per cent., whilst those of London Transport fell by about 2 per cent. In railway freight traffic, the fact that tonnages were about the same as last year shows that the increased receipts were due mainly to the rate increases in May; a 7 per cent. increase in livestock consignments made little difference. Without an analysis of passenger-journeys during the peak travel period it is hard to name any cause of the fall in receipts. The rise in B.T.C. provincial bus takings points to general loss of traffic by the rail to the road; against this there is the all-round decline in London Transport receipts, mainly in railway period return and in bus and tram ordinary fares, which seems due to reduced public spending power. The 10 per cent. rise in hotel and catering receipts was caused by acquisition of private undertakings and by additional restaurant car workings.

Transport Co-ordination in South Africa

IN the course of a statement made during his recent visit to the United Kingdom, Mr. P. O. Sauer, South African Minister of Transport, gave special attention to the efforts being made to co-ordinate and rationalise state and inter-state transport in Africa south of the Equator. He pointed out that a very large area in Africa was only partly developed and co-ordination of transport would be necessary to ensure planned development throughout the Continent; at present the transport systems were neither co-ordinated nor rationalised, and unless they did something, they would find themselves in great difficulty. As the Union of South Africa was by far the most developed territory, it was taking the lead in planning the co-ordination of African transport. The problem was so important that in 1949 a preliminary conference had been held in Portugal and on that occasion it was decided to set up a permanent body

and to ask South Africa to start the interim organisation; Mr. W. Marshall Clark, who had been General Manager of South African Railways, had been appointed Interim Secretary-General. In October, this year, a conference would be held in Johannesburg, and delegations from Great Britain, France, Portugal, Belgium, and Southern Rhodesia would attend. They hoped to institute a permanent organisation, which would deal with inter-state transport, though Mr. Sauer stressed that it would not interfere with the internal affairs of any country.

South African Market for Railway Equipment

COMPARING his department with the British Ministry of Transport, Mr. Sauer said that in South Africa the state-owned railways operated a fairly extensive system of between 13,000 and 14,000 miles and a system of buses of 25,000 to 26,000 miles, as well as controlling ships, harbours, and the most important air service in Africa. South Africa offered an enormous market to United Kingdom manufacturers and since 1945 the South African Railways & Harbours Administration had spent some £31,000,000 on stores from the United Kingdom. Present orders being executed in England, and as yet not paid for, were to the value of £7,500,000 and included such items as rolling stock, aircraft spares, and textiles. The largest tenderer for railway wagons in South Africa had established a subsidiary firm there and he thought that South Africa would soon stop importing wagons; probably the present orders in Canada would be the last. Mr. Sauer added that they were helping the older manufacturers in England and other parts of the world to open subsidiaries in South Africa and were making it possible for such industrialists to invest large sums of money in the Union.

Overseas Railway Traffics

DURING the fortnight ended September 17 there were two substantial advances in receipts of the Antofagasta (Chili) & Bolivia Railway, which brought the aggregate drop in traffics since January 1 back to £46,630 at £2,365,824. There was a £28,060 improvement to £76,950 in the first week, followed by a further increase by £20,290 in the second, when traffics amounted to £80,140. Gold Coast receipts for the month of July were up by £9,039, at £237,178, and traffics for the current 18 weeks are now higher by £25,876, at £959,701. During July of the financial year 1949-50, Midland Railway of Western Australia receipts were affected by a coal-miners' strike and results for the same month of 1950-51 show an increase of £12,794 to £33,656. La Guaira & Caracas traffics decreased by a further $33,830 in August this year and on the aggregate since January 1 are now only $656,809, as compared with $859,223 last year. Salvador Railway receipts during the month of June were C21,000 lower at C121,000, so that traffics for the year 1949-50 fell by C174,000 to C1,852,000.

Argentina Paying Railway Debts

IN an editorial note in our September 22 issue we stated that the money owing by Argentina for railway material bought in Britain had not yet been paid, although the Argentine Government had placed funds at the disposal of the Argentine Railway Purchasing Commission in London. The amount is put by the Argentine Ministry of Transport at £7,453,000 of which £3,478,000 is for material already received and in use, and £3,975,000 for orders placed before January 1 this year. We learn that some £500,000 has now been paid, and that it is expected that the remainder will be paid within a month. It is most satisfactory to record this development, which gives substance to the spirit of the recent Argentine Decree, to which we also referred, wherein tribute is paid to British products. It is welcome proof that the century-old connection between British railway equipment builders and the Argentine railways remains strong and that its continuance is desired as earnestly in Argentina as in this country.

Ulster Government Statement on G.N.R.(I.)

AS we were about to close for press we learned from Belfast that a full statement on the Northern Ireland Government policy regarding the Great Northern Railway (Ireland) would be made by Mr. W. V. M'Cleery, Minister of Commerce, when the Ulster House of Commons reassembles on October 3. Last month Mr. M'Cleery had talks in Dublin with Mr. D. Morrissey, Eireann Minister for Industry, at which the future of the railway was discussed. It was suggested afterwards in some quarters that the Northern Ireland Government had decided that it could not buy the portion of the G.N.R.(I.) which operates in Northern Ireland. It is argued that the Government, faced with the Ulster Transport Authority's losses this year of about £400,000 and with the fact that the G.N.R.(I.) is losing at the rate of £1,000 a day, could not meet the additional financial burden of buying the Northern Ireland section of the company. Both Mr. M'Cleery and Mr. Morrissey, before their discussions, had received a report signed by Major F. A. Pope, Chairman of the Ulster Transport Authority, and Mr. T. Courtney, Chairman of Coras Iompair Eireann, containing proposals for the solution of the problem.

Convertible Sleeping Cars

THE earliest third class sleeping cars in Great Britain, like the French *couchette* coaches, were of a convertible type, in which the upper berths could be folded up into the compartment walls when out of use, so permitting the sleeping car to be used as an ordinary coach during the daytime. From these there developed the present type of third class sleeper with fixed berths, it being argued that as these cars were required only for night use, convertibility was a needless complication. The Western Region plan to run all-sleeping-car trains between Paddington and Cornwall at the busiest holiday weekends, on which we commented editorially in the September 8 issue, suggests, however, that there might still be valuable future use for vehicles of the convertible or *couchette* type. Far more holiday makers now are in a position to begin their holidays on a Friday evening, instead of Saturday morning, and those going to distant resorts would be more attracted to a Friday night journey, rather than crowded Saturday travel, if they had a prospect of getting a good night's rest *en route* at a reasonable cost, and thereby of adding, in effect, a day to their leave. The regular provision of third class sleeping cars at weekends between London and the more distant coast resorts, in addition to those already run to and from Scotland and elsewhere, would provide this attraction, and similarly between the big provincial cities and the coast. During the week convertible cars could be used as ordinary corridor coaches.

First British Railways Standard Locomotives

BRITISH Railways 1951 locomotive programme, further reference to which will be made in a future issue, includes the construction of some 160 locomotives to six of the new standard designs evolved under the direction of Mr. R. A. Riddles, Member of the Railway Executive for Mechanical & Electrical Engineering. The locomotives are to be built at Crewe, Derby, Swindon, and Brighton works, and have been designed for mixed-traffic duties, so as to give the maximum inter-availability of use within their power range. The programme includes two designs for 4-6-2 tender locomotives, the first 25 of which are to be capable of undertaking the duties and of working over all routes now operated by such types as "West Country" Pacifics, "V2" 2-6-2s, and "Castle" and L.M.R. Class "6" 4-6-0s. The second class of 4-6-2 will have lighter axleloads. It is stated that the best practices of all Regions have been studied with the object of embodying in all the new engines maximum ease of access for servicing and repair, economy of coal consumption, and a high degree of interchangeability of parts. All features calculated to increase mileage between repairs, which will give maximum economy in operation consistent with an adequate reserve of power, are being included.

Winter Train Services—Eastern, North-Eastern, and Scottish Regions

THE lion's share of the improvement in timing over the East Coast main line is due to the speed enterprise of the North Eastern and Scottish Regions, both of which are bringing into operation timings between certain points that are as fast as, if not faster than, any in force before the war, the streamline trains alone excepted. Over the 44·1 miles from Darlington to York, for example, there are two bookings in 43 min. start to stop (61·7 m.p.h., the fastest in Great Britain today), five in 44 min. (60·2 m.p.h.), and two in 45 min.; in the reverse direction, against the rising tendency of the road, there are two in 45 min. and eight in 46 min. The best start-to-stop time of 87 min. for the 80·1 miles from Newcastle to York compares with 95 min. before the war, though the streamliner "Coronation" was allowed only 77 min. from York to Newcastle.

From Newcastle to Edinburgh the "North Briton," allowed 145 min. for the 124·4 miles before the war, is now booked in 140 min., and the "Queen of Scots" in 136 min.; the latter southbound has 135 min., both faster than any pre-war timings other than the 120 min. of the "Coronation" and the 130 min. of the 1.20 p.m. from Kings Cross to Edinburgh. In place of the fastest pre-war Newcastle-Berwick timing of 77 min. for the 66·9 miles, there are now two 71 min. bookings (10.5 a.m. and 2 p.m. Kings Cross-Edinburgh), and two trains are booked over the 32·3 miles from Alnmouth to Berwick in the sharp timing of 34 min. start to stop. In Scotland the ideal of an hourly service between Glasgow and Edinburgh, starting at the even hours, is nearly attained; departures are at the exact hour from 10 a.m. to 8 p.m. westbound and 10 a.m. to 4 p.m. eastbound. One run is made in 58 min., two take 59 min., four 60 min., one 61 min., seven 63 to 65 min., and six 66 to 70 min.; including the "Queen of Scots," 28 of the daily workings between the two cities by this route are restaurant-car equipped, and eight also by the one-time Caledonian route.

Of the principal East Coast trains the most substantially accelerated is the "Queen of Scots," which comes down to a 3½-hr. non-stop run over the 185·8 miles between Kings Cross and Leeds. Leaving Kings Cross at noon instead of 11.45 a.m., this train reaches Edinburgh at 8.4 p.m. and Glasgow at 9.12 p.m., instead of 9.20 p.m. (23 min. quicker); coming south, departure from Glasgow is at 10.50 (instead of 10.30 a.m.) and from Edinburgh at 12 noon, Kings Cross being reached at 8.5 p.m., a gain of 25 min. The 8.35 a.m. from Glasgow to Kings Cross also is accelerated 25 min., 20 min. of which is cut between Edinburgh and York. The up "Flying Scotsman" is speeded up by 14 min. to reach London at 5.46 p.m., and the down "Flying Scotsman" by 7 min. to arrive in Edinburgh at 5.47 p.m.; the 2 p.m. from Edinburgh to London has a cut of 15 min., entirely between Edinburgh and York, reaching Kings Cross at 9.55 p.m., and the corresponding down express arrives in Edinburgh at 9.59 p.m., an acceleration of 8 min. on the summer time, notwithstanding additional stops at Berwick and Dunbar.

Other substantial accelerations are of the 1 a.m. Kings Cross to Edinburgh (17 min. north of York), 8.55 a.m. ("North Briton") Leeds to Edinburgh (13 min.), 7 p.m. ("Aberdonian") Kings Cross to Aberdeen (19 min.), 7.10 p.m. ("Aberdonian") Aberdeen to Kings Cross (25 min.), 8.20 a.m. Newcastle to Bristol (15 min.; all but 1 min. north of York), and 4 p.m. ("North Briton") Glasgow to Leeds (15 min. between Edinburgh and York). All these accelerations are over the summer timings, and less than half the cuts in time are attributable to the restoration of normal speed running between Berwick and Edinburgh; the remainder is due to faster general running, and the North Eastern Region is to be congratulated on this admirable post-war speed enterprise. As a result, there will now be 15 daily services between Kings Cross and Edinburgh in from 7 hr. 46 min. to 8 hr. 20 min., with an average journey time of 8 hr. 6 min.

In Scotland, a new high speed booking over the West Coast route is that of the 1.45 p.m. from Glasgow to Carlisle, booked to cover the 66·9 miles from Symington over Beattock Summit to Carlisle in 67 min., at a speed of almost exactly 60 m.p.h., and quicker than any previous start-to-stop timing between these two points. The southbound "Midday Scot" retains its timing of 75 min. over the 73·5 miles from Carstairs to Carlisle (58·8 m.p.h.), and the 9.30 a.m. from Glasgow to Birmingham has 77 min. allowed for the same run. The southbound "Royal Scot" resumes, after many years, its stop at Carlisle Citadel, to set down or pick up passengers, and is booked from Glasgow to Carlisle in the fast time of 125 min. The Edinburgh portion of the 4.25 p.m. from Liverpool to Glasgow is to continue with the main train as far as Carstairs (instead of being detached at Carlisle), and reaches Edinburgh at 10.30 p.m., 15 min. earlier; a new train is run from Carlisle at 8.22 p.m. through to Perth, calling at principal stations. In the north of Scotland, the 7 a.m. from Inverness to Wick starts at 6.40 a.m., and is accelerated 18 min., reaching Wick at 12.52 instead of 1.30 p.m.

A notable Scottish development is the closing on Sundays of Buchanan Street terminus in Glasgow. Trains between Glasgow, Perth and beyond are transferred to Queen Street, including the 10.15 a.m. and the 11.10 p.m. to Aberdeen, the 11.25 p.m. sleeper to Inverness, and the 7 p.m. to Dundee, with the corresponding return services. Transfer between the late L.N.E.R. and L.M.S.R. main lines is made by means of the Greenhill spur, and there is no increase in overall running times resulting from the change. Similarly on Sundays the trains between Glasgow (Queen Street) and Edinburgh (Waverley) are diverted to call at Falkirk (Grahamston) instead of Falkirk High, and also use the Greenhill spur.

Reverting to the Eastern Region, the most outstanding development is the extension of systematic train departure times to the services out of Kings Cross. Leeds and Bradford departures, with certain exceptions, are at 18 min. past the hour, so that the 9.15 a.m. ("White Rose") becomes 9.18, the 10.15 a.m. 10.18, the 12.45 p.m. 1.18, the 1.20 p.m. has a considerable alteration to 2.18, and the 6.5 p.m. becomes the 6.18. For the north, in addition to the 1 a.m. Edinburgh sleeper, the 10 a.m. "Flying Scotsman," the 2 p.m Edinburgh, and the 7 p.m. "Aberdonian," the "Queen of Scots" is moved from 11.45 a.m. to noon; this compels the "Northumbrian," previously starting at noon, to take one of the Leeds paths at 12.18 p.m. There is no alteration of other main line departures from Kings Cross, nor any material alteration in up times, except those already mentioned. The 9.15 a.m. from York to Kings Cross now becomes a restaurant car train throughout (instead of from Hull), and transfers its Selby stop to the 7.50 a.m. from Newcastle to Kings Cross. The 9.55 a.m. from Leeds to London calls additionally at Retford (also at Huntingdon on Saturdays) and arrives 5 min. later at 2 p.m. From York the previous 3.25 p.m. buffet car train to Colchester starts 35 min. earlier, at 2.50 p.m., and so restores connection at March with the Liverpool-Harwich boat train.

As already announced, off-peak suburban services from and into Kings Cross now are at systematic times, and the same principle is extended to the Cambridge buffet trains, which now are arranged to leave Kings Cross at 9.5 a.m. (the old 9.45 a.m.), 12.5, 2.5 (the old 2.25), 8.5 (the old 9 p.m.), and 11.5 p.m. (an additional service). In the up direction, buffet train departures from Cambridge for Kings Cross are at 9.10 a.m., 12.10, 3.10, 6.10, and 10.10 p.m., all fairly close to previous times except the 10.10 p.m., which is a new service. Between Liverpool Street and Clacton-on-Sea a much reduced even-hour interval service also is retained, with its buffet car facilities, the departures from Liverpool Street are at 10.30 a.m., 3.30, 4.30, 5.30, and 6.30 p.m., and from Clacton at 8 and 10 a.m,, 12 noon, 4 and 6 p.m. Among minor changes, the 8.20 a.m. (now 8.30 a.m.) from Kings Cross to Hull no longer is a restaurant car train throughout, but as far as Peterborough carries a buffet car, which returns to London on the 1.30 p.m. "slow." The southbound "South Yorkshireman" will call additionally at Aylesbury. Regular interval departures also now operate on the Fenchurch Street and

Southend-on-Sea service in off-peak hours, with expresses at the even hours from Fenchurch Street, slow trains at 25 min. past and Tilbury line trains at 40 min. past, and correspondingly in the reverse direction. First class accommodation is now restored to nine trains down and nine up daily. Further trains are added in peak hours to the Liverpool Street-Shenfield electric service.

The three winter timetable books which figure in this review bear on their covers the inscriptions, "Passenger Services, London (Kings Cross, Liverpool Street, Marylebone, Fenchurch Street), Eastern Counties, The Midlands, The North, including suburban services"; "Passenger Services, North Eastern England," and "Passenger Services, Scotland," respectively. The first-mentioned retains its "Bradshaw" format, and the last the Murray format with a similar size of page; the North Eastern Region book has the larger page, similar to that of the London Midland Region, but with the clearest type and presentation of any of the Regional timetable books. We hope to review the changes in the London Midland Region and Southern Region in our next issue.

Industrial Mission to Pakistan

THE report* of the United Kingdom Industrial Mission which visited Pakistan during the early part of this year has now been published. The mission, which was the result of an invitation from the Government of Pakistan and accepted by the British Government, was led by Lord Burghley. The report, which is divided into three parts, reviews the economic progress of Pakistan since the partition of India in 1947, together with the past and the future of Anglo-Pakistan trade, the latter being analysed in considerable detail. The mission recommends that the first efforts of Pakistan in industrial development should be concentrated on industries which are not too complicated, and which would not require highly-skilled industrial technique, as one of the serious problems in Pakistan is the shortage of experienced executives and skilled technicians. As a means to overcoming this difficulty it is suggested that more Pakistanis should be sent to the United Kingdom to take engineering and similar degrees and serve an apprenticeship in our factories to acquire a thorough knowledge of modern industrial methods, and that the facilities for technical education in the colleges and universities in Pakistan should be developed and extended.

It recommends that His Majesty's Government, in consultation with the Federation of British Industries and similar organisations, and with the Government of Pakistan, should consider how facilities for training Pakistanis in the United Kingdom might be increased. It is understood that the F.B.I. has allocated places to Pakistan for training; that Imperial Chemical Industries Limited have provided research fellowships for Pakistani students, and the British Electrical & Allied Manufacturers' Association have sponsored direct arrangements for training between the Pakistan Government and electrical firms in this country.

It is obvious from the report that the basic needs of power, water, and transport would require to be met before intensive industrial growth were possible. Expansion of water-power supplies would appear to be a vital necessity. The roads and railways in much of Pakistan were designed primarily for strategic needs, and as such may not be suitable to meet fully the changing conditions which will result from the economic development of the country. In addition to the rearrangement of the railway system within the confines of the geographical boundaries resulting from partition, considerable difficulties have been caused by lack of coal, necessitating large-scale conversion of locomotives to oil burning. Additional locomotives, carriages, and wagons are required to maintain and improve the efficiency of the railways.

In the opinion of the mission, the development of Pakistan does not yet warrant the establishment of works for the manufacture of heavy machinery and electrical equipment, but it considers there are good prospects for the manufacture of light products for which a growing demand is likely, and suggests that British manufacturers of such products would be well advised to consider establishing small plants in Pakistan capable of expanding as the growth in demand takes place. The Pakistan Government has recently established an Industrial Development Corporation to promote the formation of independent companies to establish such industries, offer their shares to the public, and take up any shares not subscribed by the public until the moment is opportune to dispose of the share holding to private buyers. The report indicates that there are difficulties to overcome, and that those who are able to overcome them and are early in the field will share in the benefits and the increasing opportunities arising from the developing economy of Pakistan.

* Report of the United Kingdom Industrial Mission to Pakistan, published by His Majesty's Stationery Office. 7s.

Electric and Steam Working in U.S.A.

CONSIDERABLE interest has been aroused by the article in our August 11 issue on the Norfolk & Western Railway's abandonment of electric operation. One question raised by a correspondent concerns the extent of the movement in the States to change from straight electric to diesel-electric power. At present there is no tendency to interfere with any of the large electrified mileages of main line, such as the 662 miles of the Chicago, Milwaukee, St. Paul & Pacific Railroad through the Rocky Mountain and Coastal Divisions. On the other hand, for the present at least, a stop has been put to the extension of electrified areas on American main-line railways, which in all probability would not have been the case if the diesel-electric locomotive had not proved its worth for the main-line working of passenger and freight trains. The New Haven, for example, adopted diesels on its northern lines instead of carrying its electrical equipment through to Boston. Again, the Pennsylvania decided shortly after the recent war to put its money into diesels instead of extending its electrification over the busy main lines between Harrisburg and Altoona. It has to be borne in mind in this connection that the traffic density on the Boston side of New Haven is less than it is on the New York side. If the traffic density between Harrisburg and Altoona on the Pennsylvania had been equal to that between New York and Philadelphia, the decision might have been different, but that, of course, is conjectural.

Details of changes in the stock of U.S.A. railway locomotives show the recent trend of motive-power development. During the two years ended June 30, 1950, the railways installed 124 steam locomotives, 3,707 diesels, and no electric locomotives. They withdrew from service 7,675 steam and 24 electric locomotives. On July 1 last, they owned 35,701 locomotives, of which 26,417 were steam, 8,589 diesels, and 695 electric. Though few in number, the electrics are generally the more powerful machines, having an average tractive effort per unit at least 7 per cent. greater than the steam locomotive average and 5 per cent. above the diesel average. The total tractive power of the electric locomotives has been the same since 1943, while that of the steam locomotives has fallen rapidly, and the volume of diesel power has expanded year after year.

On July 1 the U.S.A. railways had 1,000 new locomotives on order—23 steam, 973 diesel, and four electric. Obviously, the diesel-electric has the support of the railways as a prime mover, which can go anywhere and do almost anything. In exceptional conditions, such as involve the haulage of heavy loads in a region of dense traffic over stiff gradients, electric working has certain advantages. In the Pocanhontas Region, the Virginian Railroad works very large net train loads which in busy times average nearly 2,500 tons, at an average speed of 12 m.p.h. These average results for the whole system are possible largely because 137 miles of especially hard road, out of a total mileage of 662, are electrified and operated by electric locomotives of exceptional power. The moral is that each section of line has to be examined in the light of all the local circumstances, before a prudent decision can be formed about the system of working, which will meet traffic requirements in the most efficient and economical manner.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Railway Efficiency

September 19

SIR,—Mr. Peter Collins' letters always present old arguments with a refreshing naivety which is entertaining, if they do not add materially to our store of knowledge. His theory of creating well-paid jobs for, presumably, stationmasters at such stations as Barnham (September 8 issue), rather overlooks the fact that a child must walk before it can run. Experience at a small station as, for instance, Barnham, certainly fits an able man for a more responsible position later.

Perhaps Mr. Collins will let us know to what he attributes the present spate of applications for each stationmaster's position advertised. His own experience should assist him here. And whatever the actuating motive for these applications, how does he think increased pay will change the type of applicant? May I suggest that born leaders, to whom he refers, are not primarily attracted by financial considerations?

Yours faithfully,

H. W. WARWICKER

7, North Station Road, Peterborough

August 28

SIR,—In describing as ambiguous my statement that double the staff are employed at control offices, Mr. W. A. G. Wellesley in your August 25 issue is at variance with long-experienced stationmasters, who claim that these comparatively new institutions are not only greatly overstaffed, but far less efficiently conducted than they have ever been. They might just as well be closed down altogether for all they are worth.

In the old days, before they existed, traffics were carried much more efficiently and quickly, when the railways dealt with 100,000,000 tons more, and hundreds of millions more passengers.

In your same issue, Mr. R. Bell enquires why American railway passenger traffic is going downhill. The reason is that their workers are paid three times as much as in England. So they have plenty of money to buy cheap cars. They also pay less in taxation, and get very cheap petrol. Another point is that American railways never did pay much attention to developing passenger traffic—which they are now engaged in remedying. They concentrated almost exclusively on building high-capacity wagons, etc., in order to develop their industries by providing them with the lowest possible rates. By this means, as they have often claimed, they have become the most powerful industrial nation—with the highest paid workers—in the world.

Yours faithfully,

E. R. B. ROBERTS

Eynesbury, St. Neots

Steam Distribution on Colonial Railway Locomotives

August 14

SIR,—The formula cited by Dr. Tuplin in your issue of July 14 is most interesting and, I think, new, but is it desirable that lap shall always vary directly with piston valve diameter? Also, by introducing stroke, which has no effect on steam entrance and exit (the combining lever being proportioned to suit) the formula seems to tie up components too rigidly.

A locomotive has to fulfil three functions: (*i*) to start a train, (*ii*) to haul a capacity load at a good average speed, and (*iii*) to effect (*ii*) as economically as possible.

Item (*i*) is sometimes neglected. Always to effect it without setting-back, it has been demonstrated that maximum cut-off should be 88 per cent. and lap plus lead 19 per cent. of as long a valve travel as practicable. Also, to effect item (*ii*), that a steam port opening of $\frac{1}{10}$ of cylinder piston area at 25 per cent. cut-off is necessary. These figures were given at a Canadian Railway Club debate by a leading locomotive valve gear designer. They seem to me to present a simple basis on which a general purposes design can be built up.

All modern Colonial locomotives are general-purpose machines, having wheels of 4 ft. to 4 ft. 8 in. dia., with resultant high piston valve velocities. They are almost always loaded to capacity. That they may often be seen blowing off when working, seems to indicate that their cylinders could use more steam, if it could get in.

With these engines, the importance of maximum port openings in the 25-45 per cent. cut-off range is such that I would like to see a full-sized model made of the designed valve gear for any new class of tender engine, and port openings in forward gear adjusted for maxima to fine limits—much as the lines of a new vessel are faired in a shipbuilder's loft.

If I remember aright, in an article contributed by Dr. Tuplin in *The Railway Gazette* in the early 1940's, he gave a sketch of a slotted cam-path which would divert the plain harmonic motion of a valve gear and cause the valve to "dwell" at port openings. It seemed to me that this might prove to be a major contribution to valve gear design. At that time I had recently retired, so was not in a position to have the device fitted experimentally to an existing locomotive, as I should otherwise have done. Could Dr. Tuplin reproduce the sketch and explanation for current information?

Yours faithfully,

G. V. O. BULKELEY

Uvongo Beach, Natal

Timetable Recovery Margins

August 25

SIR,—I have read with great interest your leading article on "Timetable Recovery Margins" in your issue of August 18. I was also interested to observe recently that the first of the new Brighton-built L.M.S.R. type 2-6-4 tanks has arrived on the Southern Region Oxted line, and also to read in your columns the recent correspondence on "Diversions on Four-Track Main Lines," which I indirectly initiated.

These three subjects may seem quite separate, but there is some connection between them. The arrival of the 2-6-4 tanks on the Oxted line has reminded me that this must be one of the last lines in England carrying fairly heavy traffic to have modern locomotive power introduced. Unfortunately the introduction of such power to a line seldom seems to be followed by timetable improvements; I hope the Oxted lines may prove an exception.

Before the war trains between Woking and Waterloo were mainly hauled by 4-4-0 and 2-6-0 types; 4-6-0s and 4-6-2s are the usual motive power now but the schedule remains unaltered at 31 min. for most fast trains. Going back further, I find that in 1898 the 5 p.m. from Waterloo accomplished the journey in 32 min., a schedule that remains unaltered for this train to this day!

I travel on the 6.9 p.m. from Waterloo most days. The usual motive power is a "Remembrance" class 4-6-0. A record of 26 runs showed that the arrival at Woking averaged 2½ min. early, yet this train is unpopular with the operating staff as it fails to make an energetic start from Waterloo and so causes slight delays. How can a driver be expected to work his engine hard for the first mile or so when he has time in hand at the other end?

In the same connection an official informed me that some of the exasperating checks discussed in "Diversions on Four-Track Main Lines" are due to a fear on the part of the operating department that an early running steam train, if it gets out of its pathway in the suburban area, may cause delay to electric trains by trying to spin out time on the last stage of its journey.

Yours faithfully,

J. B. LATHAM

18, Wheatsheaf Close, Woking

THE SCRAP HEAP

Pass Friend

A man fined at Mansion House for travelling with intent to avoid paying his train fare was said to have shown a wallet inscribed "Pass Friend" to a ticket collector.—*From "The Evening News."*

"What Song the Siren Sang . . ."

Sportsmen in Toronto have asked the Canadian railways to change their diesel locomotives "WOO WOO" siren to "WHOA WHOA." They complained that the present clarion call is fatal for bull moose who mistake the siren for the love call of the cow moose.

Railway officials scoffed, and said the moose was attracted by the diesel's bright headlights. But the Sportsmen's Association reported that eleven bull moose were killed in one week, and demanded that the siren be pitched lower, changing the "WHOO" to "WHOA."—*From the "Northern Whig."*

Taking the Chair

During the stay of the British Isles Rugby team in Wellington, New Zealand, Mr. F. W. Aickin, the General Manager, New Zealand Government Railways, received a visit from Mr. Don Hayward, the railwayman (Western Region) member of the team, who was accompanied by his team-mates, Tom Clifford of Ireland, and Dai Davies of Wales. While inspecting the Railways Head Office building, Mr. Hayward was "temporarily promoted" to the chair of General Manager, New Zealand Railways.

The British Isles team were excellent ambassadors and endeared themselves to New Zealanders. New Zealand railwaymen are keen Rugby players. They run a Sunday competition from "the North Cape to the Bluff" in which fifty-nine teams take part and wind up with a North versus South Island representative match in which the play is of outstanding merit.

Arrival and Departure

Recently a woman tried to plan a railway journey by timetable from Lowestoft to Stratford-on-Avon across country. She had to give it up, however, and her dilemma—aired in the correspondence columns of *The Times*—inspired the following article in the *News Chronicle* by H. de Winton Wigley. Among the letters published was one by Mr. D. S. M. Barrie, Public Relations Officer, Railway Executive, who showed her the right way to go about the job, and at the same time referred to the intention of the Railway Executive to publish in due course a standard timetable combining modesty of size with clarity, and to provide new maps more helpful than the general railway map now in use.

There are many people, writes Mr. de Winton Wigley, who will accept a challenge for a cross-country race through *Bradshaw* with joy. In fact, it may be taken for granted that immediately a certain lady was in a dilemma, thousands of people reached for their copy and at express speed had this lady safely at Stratford. . . .

Nor is the P.R.O. to the Railway Executive entitled to rank as an amateur in this matter. He advised the correspondent to consult the railway map, find the nearest large railway centre to Stratford, look up the alphabetical index, and so on.

As one who is regularly baffled by *Bradshaw* and constantly stranded at Riccarton Junction and similar places I used this officially advised method to blaze a trail from Mablethorpe to Hereford through the 20,000 daily passenger trains and 800 tables which hypnotise people like me.

Nearest big centre, Lincoln. Right. But according to the index Lincoln has never even heard of Hereford . . . .

Back to the map and Mablethorpe . . . Try Nottingham. Right. Yes, table 798, and I am in Notts.

Pass the map please . . . Notts to Birmingham, Table 656. Right.

All change—and then things are a little vague—for me at any rate.

I make it that I *may* arrive Hereford at 7.3 p.m. but spot a big "D." Turn to page 659. "D. About 250 yards to W.R. station." (No, that applies to a big and blacker "D.")

My "D" means *via* Droitwich Spa. Who cares? I'm there—I hope.

Bradshaw fiends will be sorry that British Railways intend to aim at more clarity combined with modesty of size.

Best Kept Station Garden Record

Since Mr. Harry Walker went to be Stationmaster at Stocksfield in 1936, he has won a prize in the Best Kept Station Garden Competition every time it has been held, and this year he walked away with the highest award in the North Eastern Region of British Railways, a special prize of £10. Last year, and the year before, his station was placed in a special category.

"Slanguage"

(*A plea for a return to simplicity in railway terms.*)

"A rose by any other name,"
The poet said, "would smell as sweet."
If he'd been in this transport game,
He could have had a lovely treat.
For, every day, some fearsome word
Replaces one we love and know
And older heads find it absurd
To watch this railway "slanguage" grow.

No doubt it's all done for our good,
Doubtless it helps to run a train
When names we've always understood
Go tumbling headlong down the drain,
When clerks become "executives"
And tiny men go to and fro
Enveloped in superlatives,
Watching their auras grow and grow.

We're "pixilated," "palletised,"
Bewitched, bewildered, botherised,
Definitely demoralised
Till all our brains are paralysed.
So, listen to our *cri de coeur,*
Don't strangle us with outsize nouns;
We simple railwaymen prefer
To wrestle with our ups and downs
And cope with adventitious fate
In Anglo-Saxon, plain and round—
Although they "circum-motivate,"
Just let us watch the wheels go round!

A. B.

Mr. Don Hayward, the railwayman member of the British Isles Rugby team to visit New Zealand, administering a "warning" to two team mates while temporarily occupying the chair of Mr. F. W. Aickin, New Zealand Railways General Manager, who is standing on his left (*see paragraph above*)

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

EAST AFRICA

New Branch Opened

The Mpanda branch in the Western Province of Tanganyika was opened for all classes of traffic on August 21, 1950. The first construction train reached Mpanda on August 9, 1950. It was hoped that the Governor of Tanganyika, Sir Edward Twining, would open the line but unforeseen circumstances prevented him and no official opening ceremony was held.

The branch, which takes off from the main Tanganyika Central Line at Kaliuwa, between Tabora and Kigoma, runs south for 131 miles and opens up an important mining area north of Lake Rukwa now being developed by Uruwira Minerals and lead ore is already moving to the coast at Dar-es-Salaam, a distance of 730 miles.

Construction began early in 1948 as a result of an agreement between Uruwira Minerals and the Tanganyika Government in which certain tonnages and payments to the East African Railways & Harbours are guaranteed. Some of the track used came from the Nairobi to Nakuru section in Kenya, which was relaid with heavier rails.

SOUTH AFRICA

Rolling Stock

The railways are making steady progress in reducing the shortage of rolling stock which resulted from the war. During the financial year ended March 31, 1950, 8,299 wagons, 188 passenger vehicles and 104 locomotives were placed in service. Since the current financial year began, a further 2,014 wagons and 53 passenger vehicles were placed in service. During this period, 33 bogies, 106 four-wheel wagons, eight coaches and five locomotives were scrapped.

Of the 53 passenger vehicles placed in service, since April, 39 were imported and 14 built in South African railway workshops. Imported trucks amounted to 1,501, as against 108 built in the railway workshops and 405 built by local industry. These were supplied by Dorman Long (Africa) Limited, as part of an order for 2,000 DZ-7 drop-sided steel bogies. This firm will soon begin production on a further order for 1,500 B-22 type wagons and 500 FB-8 covered bogie wagons.

Of the all-steel first-class main-line passenger saloons now being built, the first was placed in service during June. They compare favourably with the stock of the "Blue Train" for comfort and convenience, but are not air-conditioned. Fully equipped, the new type of saloon weighs 45 tons. Compartments are fitted with improved upholstery, hot and cold water, fluorescent lighting, balanced windows with safety glass, and ashtrays. Each saloon has a shower bath and dressing room.

The saloons are being manufactured by the Birmingham Railway Carriage & Wagon Co. Ltd., which is now busy on an order for 25 saloons. When these are completed, the firm will begin construction of 40 composite first- and second-class saloons with the same standard fittings. On completion of this second order, a further order for 40 all-coupé saloons is to be begun and delivery is expected early in 1951. Of the 65 second-class main line saloons ordered some years ago, 41 are already in service, and the remainder are in course of delivery.

TASMANIA

Staff Recruiting Campaign

The railways are suffering from a serious staff shortage, and two officials of the Traffic Branch recently toured the State by road on a recruiting campaign. Press announcements had previously been made stating the time of their arrival at the various towns.

Broadcasts over a public address system were made in all the principal streets of the places visited. They stressed the advantages offered by permanent progressive posts with the Railway Department. A pamphlet was also distributed to enquirers and to the headmasters of schools and to employment agencies.

New Diesel-Electric Locomotives

The first two of the 32 mixed-traffic Bo-Bo diesel-electric locomotives for general service recently arrived from England and are undergoing trials on the main and western lines, on both of which there are many severe gradients, some as steep as 1 in 40 uncompensated; there are also 5 ch. reverse curves. The new locomotives are capable of a maximum service speed of 55 m.p.h., but will not travel at more than 45 m.p.h. when hauling passenger trains and 35 m.p.h. when hauling goods trains, the maximum speeds permitted at present.

The locomotives are of 660 h.p., and were built by The English Electric Co. Ltd. There are 32 on order and all are expected to be delivered before the end of 1951. The mechanical parts have been designed by the Vulcan Foundry Limited, which is building them for the first 20 locomotives; the remaining 12 sets will be built by The English Electric Co. Ltd. The locomotives, which are arranged for multiple unit working, will be used either as single units for light passenger and goods trains or coupled together for hauling heavy passenger, goods and mixed trains. If necessary up to three units may be operated as one locomotive. A crew of two will be employed in all cases.

Facilities for servicing and overhauling the diesel units, including a number of diesel rail cars and shunting locomotives already in use, are being extended. A new diesel shop is being constructed at Launceston where all overhauls and most servicing will be carried out. A 30-ton overhead crane will be placed in the main bay and a 25-ton overhead crane in the fitting bay. Other facilities to be built for the diesel-electric units include bulk storage installations for fuel at Hobart consisting of two 3,000-ton tanks, two 12,000 gal. overhead fuelling tanks at Hobart and Launceston and one 12,000 gal. tank each at Devonport, New Norfolk and Smithton.

At first, petroleum distillate will be used in these engines, but later on a lower grade of fuel oil will probably be substituted.

UNITED STATES

New "Saucer" Yard at Springfield

The St. Louis - San Francisco Railroad has completed a new freight classification yard at Springfield, containing 32 miles of track mainly in 32 roads. Its "saucer" type enables shunting to be carried on simultaneously at both ends, over twin tracks descending to the grid from the east end at 1 in 28 and from the west at 1 in 40. There are 11 westbound and 11 eastbound classification roads in the grid with gathering lines at each end. The grid is flanked on the north by three westbound receiving lines, and on the south by the same number of eastbound receiving lines. The capacities of individual receiving lines are from 158 to 155 wagons, and the total of the receiving lines is 936 wagons; the classification lines hold 1,574 wagons, its individual line capacity varying from 52 to 94 wagons.

The work of the yard is conducted from a 60-ft. high control tower, the top storey of which is enclosed on all four sides with vapour-proof non-glare glass. From the tower radio communications are effected with shunting engines by the paging talk-back system, which also covers many points in the yard, and even shunting engines at outlying points in the Springfield area.

The new yard which is the focal point for traffic from four directions—north-east from St. Louis, north from Kansas City, west from Monett and south-east from Memphis—deals with about 12 through freight trains arriving every 24 hr., the number of incoming wagons being about 1,500 daily.

SWITZERLAND

Federal Railways Traffics

Passenger journeys over the Swiss Federal Railways during the first half of 1950 were 97,000,000, against 101,000,000 for the same period in 1949, and 104,000,000 in 1948. The decline is attributed to general contraction of all forms of travel, aggravated by intensified road competition. The regress has, to some extent, been compensated by the Holy Year pilgrim traffic.

While the total tonnage of goods,

parcels, baggage, and mail conveyed during the first six months of 1950, at 7,000,000, was lower than that of 7,500,000 for 1949, and of 9,500,000 for 1948, there was a revival in the second quarter. An improvement set in in May (1,350,000 tons) after the monthly total had dropped to 1,050,000 tons in April; it was 1,500,000 in June. The May and June figures were affected by a considerable increase in imports. Transit traffic also showed an improvement during the second quarter, of 58 per cent. over 1949.

Transit traffic in June attained the highest monthly peak (189,000 tons) since the war. The largest share uses the Gotthard route. Northbound over the Gotthard, transit traffic generally consists of foodstuffs from Italy for Great Britain, Belgium and Germany; southbound, it consists mainly of coal from the Ruhr, iron, steel, and scrap from Germany, all for Italy. Transit traffic *via* Basle and Buchs (the Austrian frontier) was equally satisfactory during the second quarter.

FRANCE

Paris - Laroche Electrification

Electrification of the South Eastern Region main line from Paris to Laroche-Migennes is now complete; the official opening by representatives of the Ministry of Public Works took place on August 29. The party included M. Favière, Directeur du Contrôle Technique, M. Prot, Ingénieur en Chef, and many other officials of the National Railways. The inaugural train, hauled by a 4,000-h.p. 2-D-2 electric locomotive, stopped at Plessis-le-Roi substation, one of the 15 in the section, where the party inspected the high tension terminals and the traction transformer groups, 4,000-kW. rectifiers and 1,500-V. contact line feeders. The substation is normally operated automatically by remote control from Paris. The reception formalities were completed at Laroche, whence the return journey of 96-odd miles to Paris was performed in 90 min. non-stop.

Road Transport Fares

A national basic rate of 3 fr. 40 c. a km. for passengers by public road transport conveyance has been fixed by ministerial decision. This fare, however, may be adjusted to the average number of passengers carried in the vehicle, and the average distance run weekly, as well as local differences in the character of the roads. Road transport operators are also allowed to raise the basic rate by 10 per cent. or to lower it by 20 per cent.; the tariff must be approved by the Prefect of the department.

WESTERN GERMANY

Speed Restrictions

The poor state of repair and maintenance of the permanent way on many sections of the Federal Railways, the result of restricted expenditure, has necessitated gradual re-introduction of speed restrictions, of which there are at present 260 in the British and American Zones.

Double-deck Coaches

New coaching stock for semi-fast trains is to be placed in service shortly. Each set consists of three double-deck coaches 73 ft. 6 in. long, with a total of 334 seats; there will be several upper-deck second class compartments, and one coach will include a buffet compartment. This will be the first double-deck stock built for the Federal Railways, though before the war the Lübeck-Buchen Railway, an important standard-gauge privately-owned concern, owned some double-deck stock of modern design, some of which may still be in service.

IRELAND

G.N.R.(I.) Shareholders' Resolution

The annual meeting of the Shareholders' Protection Association of the Great Northern Railway (Ireland) was held in Dublin on September 16. A resolution was passed demanding that the conjoint report, prepared for the Ministers of Commerce of both Governments by Major F. A. Pope, Chairman of the Ulster Transport Authority and Mr. T. C. Courtney, Chairman of Coras Iompair Eireann, and completed last April should be published immediately.

A meeting last month between the respective Ministers brought hopes of an early decision as to how the problems of the G.N.R.(I.) could best be solved. Unofficial reports, however, emanating from Belfast, and not since denied, state that the Northern Ireland Government is understood to have decided that it will not buy the portion of the company which operates in Northern Ireland. The reason for this decision is said to be that the Ulster Transport Authority losses this year may be between £400,000 and £500,000, and as the G.N.R.(I.) is also losing money in the North, the Government would not be prepared to meet the additional financial burden.

Lord Lucas, Parliamentary Secretary to the Ministry of Transport, recently visited Northern Ireland and discussed transport problems there with Mr. M. V. McCleery, Minister of Commerce, and interested parties are now awaiting an official announcement which will clarify the position.

Publications Received

British Railways Locomotive Reference Book (60001-90774). Compiled by D. F. Barton. Birmingham, 11: Christian & Sykes, Publishers to the British Locomotive Society, 32, Park Road, Sparkhill. 7 in. × 5 in. 95 pp. Paper covers. Price 3s.—This is a companion to the locomotive reference books for other Regions already published by the British Locomotive Society, to enable railway enthusiasts to have handy-sized classified stock lists of all British Railways locomotives and their allocations, with space for recording individual transfers. This part includes all former L.N.E.R. and Ministry of Supply engines

Scottish Railways. By O. S. Nock. Edinburgh: Thomas Nelson & Sons Limited, Parkside Works, Edinburgh, 9. 9¼ in. × 5½ in. 214 pp. Illustrated. Price 18s.—This comprehensive account of the railways of Scotland will be welcomed by all who have experienced the peculiar fascination of railway construction and operation in the Northern Kingdom. The historical section is followed by chapters on the place of the railways in Scottish industry, commerce and sport; passenger train services; traffic control and signalling; the famous scenic routes in the Highlands; and train and steamer services to the Clyde Coast resorts. An engineer by profession, the author has devoted considerable attention to the great bridges and civil engineering works for which the railways of Scotland are justly famous. Students of mechanical engineering will find of interest in the reviews of locomotive construction in Scotland up to the year 1922, the locomotives during the grouping era, and locomotive performance. The author has recorded several journeys from the footplate, which are now published for the first time.

By Train Through the Canadian Rockies.—This booklet, which we have received from the London offices of the Canadian Pacific Railway, describes in detail the magnificent scenery to be seen from the train on the C.P.R. line between Calgary and Vancouver. Containing such notable feats of railway engineering as the famous spiral tunnels in the Kicking Horse Pass, this section of transcontinental route holds much of interest which travellers will be helped to identify with the aid of the sketch map of the line that runs through the appropriate sections of the text. The booklet is illustrated with many fine colour photographs of mountain, lake and gorge.

The Gresley Pacifics of the L.N.E.R. By Cecil J. Allen. Famous Locomotive Types No. 6. London: Ian Allan Limited, 282, Vauxhall Bridge Road, S.W.1. 7½ in. × 5 in. 128 pp. Illustrated. Price 8s. 6d. net.—In tracing the history of a type of locomotive which holds the world record speed for steam of 126 m.p.h., and all the principal British speed records, Mr. Allen obviously found a task after his own heart. While the records of the earlier types hold much of interest, the descriptions of the spectacular deeds of the "A 4s" are likely to attract most attention. But records are not everything, and the chapter on everyday Pacific performance, which includes an account of the response of the Gresley Pacifics to the heavy demands of war, when trains of up to 25 coaches were handled by the "A 4s," are equally deserving of praise.

Fifteenth International Railway Congress

Rail-Joint Problems

Summaries of replies to the International Railway Congress Association Question II relate to fishplated joints, long welded rails, and expansion gaps

ANSWERS to a questionnaire addressed to 26 railway administrations, mainly English-speaking (of which only eight replied in detail), were summarised in the form of a report by Mr. P. Croom-Johnson, Chief Engineer, London Transport Executive. Information concerning fishplated joints and expansion gaps relates to flat-bottom rail, except in the case of the London Transport Executive, who use bull-head rails. The British Railways Executive now has considerable experience with 98-lb. and 109-lb. per yd. flat-bottom rails, and the London Transport Executive is proposing to adopt this standard also. Only five railways considered that their experience warranted detailed replies on the subject of long-welded rails.

Sleeper Practice

Wooden sleepers are most widely used, but metal sleepers, usually of the cast-iron pot or plate types connected by tie-rods, are common in India. The Pennsylvania Railroad favours joints supported by a single sleeper and other cases of support by twin sleepers occur occasionally; otherwise all joints are suspended. The British practice of two-bolt fishplates has now been discontinued. Only the Pennsylvania administration prefers staggered joints on straight track.

Being the most important unit in the joint, the weakest part of the track, the fishplate is receiving considerable attention by designers. The revision of both rail and fishplate to provide a stiffer and stronger support at the joint, together with comparisons between the section moduli of the various types of fishplate and its percentage of the modulus of the corresponding rail are discussed in the report.

Lengths of fishplate vary from 1 ft. 6 in. to 3 ft. 2½ in., and normal practice on all lines is to provide continuous fishing bearing throughout the length of the plate. In South Africa, however, fishplates with bearings at the centres and ends and at the top and bottom respectively are being tested. Fishing angles differ considerably on various lines. Rail ends are chamfered and hardened on the Pennsylvania and chamfered only on the Victorian Railways, though hardening is being tried there. Expansion movement of from $\frac{1}{8}$ in to $\frac{9}{16}$ in. is allowed for in the difference in size between bolt and bolthole.

The usual maintenance routine is to take apart and lubricate fishplates annually. Metal packings and oversize fishplates are used to take up wear on the fishing angles. The reconditioning of plates by reforging is common practice.

No administration is seriously troubled by rail-dishing at joints, but where it occurs welding is used to make good the wear. The incidence of breakages of fishplates of whatever type is negligible, and no particular difficulty is reported in maintaining the level of the track. Suitably-shaped fishplates with bolt and plate insulation liners and insulating end fibre posts are used in almost all cases to secure insulated joints for track signalling purposes.

Mr. Croom-Johnson points out that the design of the heavier sections of rail has been considerably influenced by study of its accommodation of a suitable profile of fishplate. Whilst adhering to traditional principle in design, strength and stiffness are the main considerations in designing the modern fishplate. There is no appreciable technical advantage in the use of staggered over square joints. Some administrations favour equal top and bottom fishing angles, but others prefer a flatter angle at the bottom than at the top. In all the latter cases, however, the width of the bottom bearing surface is greater than the top. No difficulty appears to be experienced in maintaining the two rails moderately level with one another at joints, and serious dishing at joints seems to be decreasing with modern design and maintenance standards. The most common position for the nuts of fishbolts is outside the rail, but half inside and half outside is also common practice.

Fishplates are generally manufactured from steel with a carbon content of 0·42 per cent. and a tensile strength up to 42 tons per sq. in., though a higher steel content is used in America and Australia. Insulated joints for track signalling purposes are undoubtedly a source of weakness mechanically, and are unpopular with maintenance engineers. No new type obviating this disadvantage is mentioned in the replies of administrations, nor do they suggest any recent major changes in the broad principles of fishplate design.

Long Welded Rails

The normal lengths of rail given in the replies summarised by Mr. Croom-Johnson are 60 ft. and 45 ft. for standard and wider gauge lines, and 40 ft. and 39 ft. on 3 ft. 6in. and metre-gauge systems respectively. It is common practice for these rails to be welded into lengths varying from 120 ft. to 300 ft. according to the capacity of the welding plant and transport facilities. In special cases, however, longer lengths are reported, especially in tunnels. Normal rail fastenings are reported as in use with long rail-lengths, whether bull-head or flat-bottom in section. Except on London Transport and the Victorian railways anti-creep devices are considered unnecessary. Sleeper-spacing is usually the same for long welded as for normal rails.

The joints at the ends of long welded rail lengths are generally normal, but London Transport Executive mills the ends of the rails and machines the fishplates without provision for movement. No special measures are taken to anchor the track to the formation. The temperatures at which welded rails are laid vary from 40° F. to 65° F. on British Railways to 108° F. to 126° F. in India, and the daily range in temperature to which such track is exposed is usually 60° F. or 80° F.; the seasonal range is stated in most cases to be 100° F. No special regulations define temperatures at which laying shall take place.

All railway adminstrations appear to consider that longer welded lengths than they have standardised are feasible and in some cases desirable. They also appreciate the improved riding and reduced maintenance resulting from long welded rails, though they can place no economic value on them. Furthermore they agree in preferring the flashbutt process to others. With regard to site welding up of flashbutt standard welded lengths there is, however, disagreement. The two British executives are not disposed to use it, though others are.

Expansion Gaps

The prescribed joint openings in relation to temperature for different types and lengths of rail, and the methods by which they were determined, conform reasonably to theoretical calculation, and vary from a maximum of ½ in. for temperatures below 50° F. in the case of London Transport, to a minimum of zero for unwelded rails on British Railways and on the Pennsylvania Railroad at temperatures in excess of 100° F.

The replies of the administrations addressed in this instance, however, do not make it clear how rigidly these prescribed openings are adhered to in actual practice, and, judging by casual observation of a series of rail gaps on any railway, there would often appear to be considerable variation in their size within a short distance. Though such variation does not normally constitute any serious risk of track distortion, it is generally recognised that special attention must be paid to this matter during rapid seasonal increases in temperature, especially when the daily range of temperature is considerable.

In most English-speaking and associated countries, therefore, it would seem that in general the size of gap has been determined from practical experience of track conditions under normal traffic, and tolerances are left to the discretion of the engineers.

Fifteenth International Railway Congress

Principles of Profit in Railway Activities

The determination of financial balances for passenger and goods services

THE Chief Research Economist of the Swedish State Railways, M. Arne Sjöberg, co-ordinating data supplied by the Swedish railways and by the railways constituting the British, American, and English-speaking overseas group, finds that though results of an undertaking may show a total profit, some activities may be so unprofitable that, if they were reduced or discontinued, the total profit of the undertaking would increase. Unprofitable activities can be localised by cost and revenue analysis, enabling the management to decide if, and in what way, the loss on such activities can be reduced and possibly turned into profit. A striking example of this was provided on the Swedish State Railways in 1933 as a result of an examination of the composition of the parcels (less than carload) traffic. This revealed that small parcels totalled 63·5 per cent. of the total number of shipments, but, by reason of their low weight, provided only 20·4 per cent. of the total revenue of this class of traffic. In consequence, a simplified method of handling and invoicing such small shipments was adopted, which made possible savings in operating expenses. In addition, the tariffs for such small shipments were increased relatively to the rest of the goods traffic, and by these means the relative profitability of this type of business was improved considerably.

Calculations of net operating income from passenger and freight service respectively have been made by railways in different parts of the world from the earliest days. As early as 1836, the Austrian engineer, Franz Anton von Gerstner, endeavoured to determine in respect of the first railway in Russia (Petersburg to Tsarskoe Selo) the proportion between the net revenues from the passenger traffic and the net revenues from the goods traffic. It appears, however, that detailed analyses are made in very few cases as an annual routine, but in other cases as special investigations.

In addition to localising unprofitable activities, by retrospective analysis, or what is termed the "accounting method," statistical information of a different kind is desirable to assist the railway management to determine a course of action, and this form of estimation of probable future expenses and revenues is termed the "alternative budget method." Annual statistical estimates are shown as being prepared only by the Norwegian State Railways and the South African Railways. Formerly, the Swedish State Railways and the Indian Railways prepared such annual statements, but such compilation has been suspended. Other administrations consulted stated that they did not prepare such profit and loss statements in relation to passenger and freight service on a yearly basis, but only on special occasions, or in respect of special lines.

With the "accounting method," the two main forms of analysis are, respectively, that which confines the distribution of expenses to a segregation between passenger and freight traffic, and that which provides for a more detailed accounting analysis. Broadly, the cost incurred in providing a particular kind of service may be divided into three classifications. Costs directly incurred by the service may be termed separable costs or direct expenses. Secondly, there are indirectly apportionable expenses, and thirdly undividable expenses. The second and third categories include common or joint costs incurred by two or more services; and the constant fixed cost represented by return on capital investment and maintenance of structures and equipment.

It is contended that the need for the information provided by such statistics is greater than ever before in view of the disappearance of any real monopoly on the part of railways, and the consequent need for working under highly competitive conditions.

The "Accounting Method"

In the U.S.A., the allocation of operating expenses between passenger and freight service, according to a formula, was prescribed to the railways by the Interstate Commerce Commission in 1888. This practice was abandoned in 1893, however, on the ground that no trustworthy basis was believed to exist for the precise separation of expenses, and also because the results were used but rarely. A new and revised scheme for the allocation of operating expenses was issued by the Commission in 1915, and, in preparing the rules, the commission was aided by a special committee of railway officers who, however, adhered to the view taken previously that no uniform basis could be adopted which would apply equitably in all conditions. Nevertheless, this scheme still exists in modified form, and the current rules are dated November 11, 1935. These are set out in full in an appendix to the Report. Briefly, the commission lays down the general principles that:—(1) Such expenditure as may be allocated definitely and accurately should be reported separately; (2) such expenditures as may not be allocated definitely and accurately, but which are susceptible of apportionment on some basis which will approximately represent the facts, should be divided; and (3) such expenditures as are incapable of any accurate or even any approximate allocation or apportionment should be reported as "undivided." The Commission would then determine, either as a general principle or as needed in special cases, how the undivided items should be split between the two classes of service. Incidentally, in making an apportionment in accordance with these principles, railways are required to exclude any allowance for the credit that should be given to the freight service for work performed (such as carrying company fuel) in the interests of the passenger service, on the general basis that charges and credits should not be made as between services.

In the first group are the wages of the locomotive and train crews, the cost of locomotive fuel, the maintenance of motive power and other rolling stock, the charges for freight claims and baggage claims, and other minor items of expense which may be kept entirely distinct by classes of service. In the second group are such accounts as station service, which may be allocated directly in a large part, and the remainder divided in proportion to "man hours" in each class of service; yard service, directly allocable in part, and the remainder separated in proportion to "locomotive hours" in each class of service. In the third group are most of the items under maintenance of way and structures, such as permanent way maintenance, the renewals of rails, sleepers, and ballast, and the maintenance of work equipment. It includes also all items classified as general expenses.

Throughout the maintenance of way group, which presents the most difficult problems in apportionment, the Commission requires that under each account such expenses as may be traced directly should be charged either to the freight or to the passenger service, and the remainder regarded as joint expenses and reported as undivided. Superintendence, for example, is to be reported as undivided. With respect to maintenance of station buildings, the rules require that railways keep a record of maintenance costs of goods stations (to be charged to freight) and of passenger stations (to be charged to passenger), and that the remainder should be divided in the same proportion as the direct charges to that account.

Swedish Systems of Allocation

The plan for the distribution of operating expenses and revenue introduced in 1930 by the Swedish State Railways was based on American and German patterns. Direct expenses, which in 1938 amounted to about 68 per cent. of the total expenses, included station staff, train staff, engine staff, traction fuel and current, maintenance and renewal of locomotives and rolling stock. The expenses under these head-

ings were directly assigned month by month to the various classes of traffic concerned, *i.e.*, passenger traffic and luggage traffic, express traffic, mail conveyance, ordinary goods in less than carloads (LCL), ordinary goods in carloads (CL), and iron ore traffic.

The station staff expenses were separated between various classes of service and operations in accordance with a specification, drawn up once a year for a representative month for every station, showing how the working hours for every member of the staff had been distributed (in percentages) between the various duties in the station service. Due regard was paid to the varying rates of wages per hour of employees of different classes. Station staff expenses were received in that way either directly for the classes of traffic under study (*i.e.* ordinary passenger traffic and luggage, suburban passenger traffic, mail traffic, fast freight traffic, freight in less than carload, freight in carload, and iron ore traffic), or for train or yard operations, common to two or more classes of traffic. These common expenses, such as train dispatching, shunting, etc., were distributed among the various classes of traffic on the basis of the work performed. Detailed station statistics were kept by all stations, which noted the appropriate units of measurement of station production in the various classes of station operations. The main aim of this station expense allocation was to separate into individual groups the separable (direct) costs which were peculiar to the various classes of traffic, and to divide the remaining expenses in a manner that permitted of their apportionment on the basis of the work performed.

Train Staff Expenses

Train staff expenses were separated between the various classes of trains in proportion to the number of hours employed. The statement of such hours was secured from the service lists of the guards. The train staff expenses of trains conveying two or more classes of traffic were distributed between the traffic classes concerned in proportion to the axle-kilometres of the appropriate vehicles.

Engine staff expenses were separated between the various classes of trains in proportion to the number of hours spent, and a statement of the train-hours in various trains was secured from the service lists of the personnel. Running-shed expenses were divided according to the number of engines handled for each class of train.

The costs of fuel, lubricants, and so on were separated between the different classes of trains according to periodic test figures for fuel consumption, etc., for various types of locomotives and classes of trains. Electric power consumption was distributed among the different classes of trains according to technical data.

The expenses of maintenance and depreciation (renewal) of equipment were obtained by the workshops accounting system for various types of locomotives and rolling stock. The expenses of the respective types of equipment were distributed among different classes of trains in relation to the work performed in these classes of trains, measured as regards maintenance by locomotive-kilometres and car-kilometres and as regards depreciation by locomotive-hours and car-hours.

Thus, after having been separated to various classes of trains, the operating expenses above mentioned were then either assigned directly to a certain class of traffic, or, as regards costs of trains common to two or more classes of traffic, distributed between the classes of traffic concerned in proportion to the car-kilometres of these classes. The expenses of yard shunting were separated between various classes of traffic according to the data derived from periodic tests at each yard. Depot staff expenses were subjected to a complete percentage distribution of the materials and stocks handled by the depot service. These expenses were included in the prices of the various materials, especially fuel, rails, sleepers, etc., consumed in railway operation. Social charges were included in the salaries and wages of the various groups of employees.

Direct and Indirect Costs

The separation of the expenses of the first group (direct expenses) of the various operating divisions of the railway system between the different classes of traffic was prepared every month. A special statement for the whole railway system, showing revenues, direct expenses, and the surplus of revenues over direct expenses of the different classes of traffic, was also made monthly. The second group of expenses (indirect expenses), which in 1938 amounted to about 27 per cent. of the total expenses, included maintenance and depreciation of way and structures. These expenses were not apportioned monthly, but only at the end of the year.

Expenses of inspection of running tracks were distributed in proportion to the train-kilometres of the various classes of train. Expenses of maintenance and depreciation of way were first divided between yard tracks and running tracks in relation to the relative length of the two classes of tracks. The yard track expenses were then apportioned to the various classes of traffic on the basis of the relative shunting costs of these classes of traffic. The expenses of running tracks were apportioned to different classes of trains on the basis of gross ton-kilometres. Expenses of maintenance and depreciation of buildings were apportioned to various classes of traffic in proportion to the directly assigned expenses of the service group in question.

The third group (undividable expenses), consisting of general and other expenses not directly assignable or indirectly apportionable, were allocated according to the proportions of the calculated direct and indirect expenses of the various classes of traffic.

As stated already, the information necessary for formulating a business policy needs a type of calculation somewhat different from that of the "accounting method." The latter indicates the profit and loss of a particular enterprise, but does not necessarily provide the data upon which can be estimated the probable net results of various possible plans. If withdrawal of a facility is contemplated, it is necessary to ascertain the relationship between the savings in expenses and the loss in revenue. Even if the saving in cost be greater than the loss of revenue, abandonment is not necessarily most profitable for the whole enterprise.

Surplus and deficit calculations for different classes of traffic according to the "accounting method," which to a very great extent include allocated common and constant costs, do not show with precision the profitability of the different classes of traffic. Thus, a deficit according to a calculation of this type need not mean that a withdrawal of the class of traffic in question will increase the profits of the whole enterprise, but only that the class of traffic in question does not contribute to the common costs of the traffic in the same proportion as the classes of traffic which allow a surplus. On the other hand, the revenues of the class of traffic in question, despite this deficit, may be considerably greater than the costs which would be saved if the traffic were discontinued. For this reason the class of traffic actually contributes towards an increase in the profits of the enterprise to the extent that these revenues exceed such costs. Therefore, it pays to retain such classes of traffic as long as they make at least some contribution to covering the common and constant costs of production.

Admittedly, budget calculations are only approximate, and, in fact, constitute a kind of intelligent guessing. With practical operating experience, however, it is possible to make a fairly close estimate of how the economy of the railway can be expected to be influenced by any specified measure.

Value of Statistics

The justification for compiling detail statistics is to be found only in their value in guiding the management as to a course of action, and therefore most administrations assemble such data as special studies and not at regular intervals. It seems that most administrations originally prepared profit and loss statements of various classes of traffic for the purpose of supplying information considered to be of value as a guide for fixing the general level of rates and fares and controlling the operating efficiency of different classes of traffic. Such statements seem to have changed in their value from general analyses to special efficiency analyses of various phases of railway working. The figures are used as a general indicator, to determine whether further studies should be made or not, concerning such matters as the part or entire abandonment of a section of line, withdrawal of certain trains, and other measures for achieving economy in operation.

Fifteenth International Railway Congress

Signalling on Single Lines

Divergence in practice shown by replies to a questionnaire circulated to member administrations

REPORTING on the replies to Question XV of the International Railway Congress Association received from British Railways, the Victorian Railways, South African Railways & Harbours, the Pennsylvania Railroad, the Sudan, Egyptian State, Bombay Baroda & Central India, and Nizam's State Railways, Mr. H. W. Jackson, Chief Signal Engineer, South African Railways, finds that as regards control between stations, all the managements concerned, save that of the Pennsylvania Railroad, use some form of token as visible authority for a driver to enter a single-track section.

Only the Victorian, South African, and (for motor trolleys only), Sudan Railways allow permissive working, but special arrangements are admitted on all lines to cover the case of a train requiring assistance, following a breakdown. Setting back is permitted in the case of ballast trains and in emergencies, but only under very strict rules.

The electric train-staff system is found on certain lines, but in South Africa it is being superseded by the electric tablet system, allowing of either absolute or permissive working. The S.A.R. & H. have a special method of dealing with trains in long sections known as the "interloop system," which employs subsidiary electrical instruments which control the issue of what are called "permits," allowing of trains crossing each other at the "interloop" location, situated midway in an electric token section.

The telegraph order system, which is open to the failure of the human element, is still in use to some extent, but the tendency is to replace it by token working, at least on some railways. This system is sometimes resorted to when the ordinary token stations are switched out of circuit, or to allow traffic to be carried on when the electric token systems have broken down. On the Sudan Railways the "line clear" ticket system is used in these circumstances. The timetable and train order system is still widely used, but is often safeguarded by the application of track circuit controlled automatic signals.

Stations and Loops

Methods of signalling stations and passing loops again vary much, but may be divided into two, key locking systems and interlocking systems, and, in the latter case especially, the character of an installation may vary appreciably according to the class of traffic, its speed, frequency and so on. Key locking systems are used in India and Egypt, and Mr. Jackson's report describes several typical layouts with the sequence of operations required to signal a train, whether stopping or running through. In some cases these movements are rather involved, by reason of the fact that the two ends of a station have to be dealt with by separate pointsmen, acting under the orders of the stationmaster, whose movements in connection with the setting of the points (sometimes the actual clearing of the signals) are made dependent on the receipt of some electrical or mechanical release given from the centre of the station.

Where traffic is light, some lines have non-interlocked stations or loops where the points can be operated by the train crews and are fitted with indicators showing their position, preceded by warning boards without any actual signals, as ordinarily understood. Speed is always considerably restricted at such locations.

Complete Interlocking

Where, however, traffic is heavy or speeds high, some railways apply more or less complete interlocking, the number of signals used being greater or less according to traffic. For example, in some cases there is no fixed starting signal and the departure of trains is controlled without it under the supervision of the station staff. Where the facing point working is carried out by modern methods with full locking and detecting, then it is possible to have distant signals which, when cleared, enable fast trains to run through at, for example, in South Africa, speeds up to 45 m.p.h.

Many of the S.A.R. & H. stations are equipped to be switched out at night, when all trains run through on one track, in which case token working is put out of use and the telegraph order system used to deal with the lengthened section.

The very different conditions in North America have resulted in mechanical signalling, as understood in Great Britain and the Commonwealth, as well as some other countries, not being met with on single lines in the U.S.A. where trainloads are often very great. The tendency is to concentrate functions in a limited number of operators, with signal indications quite different from those generally used elsewhere. The "absolute-permissive" track circuit block has been developed further into the centralised traffic control (C.T.C.) system, which is being extensively applied in the U.S.A. Its adoption has had the effect of simplifying station layouts, since the planning of train movements avoids the former bunching of trains and reduces the accommodation necessary at crossing places, and so on. Signals are not met with between stations with these systems except in the case of the Victorian and Pennsylvania systems.

The Pennsylvania Railroad's instructions as to maintenance are unusually complete and the exact testing methods to be used with the various pieces of apparatus are set out in them, together with rules as to how often tests shall be made and by whom. Various figures for installation and maintenance costs are quoted in the report but the great diversity of practice between the railways and variations in local conditions make it difficult to assess their real value.

Diverse methods used by various European railways are shown in the report on single-line signalling methods compiled by Mr. W. A. Vrielynck, Chief of the Motive Power & Rolling Stock Department of the Belgian National Light Railways Company, and by Mr. Paul Thomas, of the same Department. The authors define clearly what they mean by a "single-line section" and distinguish two principal methods of dealing with one, according to whether there are, or are not, siding or branch connections in it where a train may be disposed of.

Methods of working can be divided into those using some form of token carried by the train, and those which do not need any. Of the former there are the plain staff system and the electric train-staff system. In the latter there is a distinction between telephone working in various forms, with or without a traffic controller, and using the principle of block working in some cases, or some form of light signalling, automatically worked by the passing trains. Some of these systems necessitate employing persons along the line, which is uneconomic unless they can perform other duties also.

Permissive System

The permissive system with divided staff, is described as simple and robust, without electrical relays and requiring no special knowledge to keep it working; by using automatic exchangers, it is possible to run through passing stations at speeds as high as 56 m.p.h. The apparatus can be worked by train crews themselves.

As regards telephone working, the report describes several variations, the first being worked under the authority of a traffic controller or supervisor, who bears the responsibility of seeing that safety is assured and is connected to each signalling point by telephone. The train guards reports to him from each station and receive their instructions, the positions of the trains and conditions of the sections being re-

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Diesel Locomotive Performance

A report on the change over from steam to diesel traction

THE Chief Engineer of the Netherlands Railways Traction Department, Mr. A. W. Olivier, reports on the replies received from railways in North and South America, Britain, the British Dominions and Colonies and in other non-European countries. The material presented, however, refers almost solely to U.S.A. railroads, and mainly to the Pennsylvania system. In November, 1946, the public railways in the U.S.A. had 37,575 steam locomotives, 3,352 diesel, and 741 electric locomotives. In June of the following year there were 3,820 diesel locomotives, and at the beginning of 1948 there were about 2,100 further diesel locomotives on order, as against 69 steam.

On the Pennsylvania Railroad for the year 1948 the operating cost of very large steam locomotives two to three years old was $1·4762 per locomotive-mile for express passenger types and $2·0169 per locomotive-mile for freight classes, these figures including repairs, fuel, lubricants, water, other supplies, and engine-house expense. The corresponding cost for triple-unit 6,000-b.h.p. passenger diesels was $0·9781 per locomotive-mile, and for quadruple-unit 6,000-b.h.p. freight diesels $1·1136; the savings of the diesels being 34 per cent. in passenger work and 45 per cent. in freight service.

On the other hand, the initial costs of the diesels were two to three times more per h.p., the passenger steam locomotives costing $241,596 each in 1946, the freight steam locomotives $220,430 in 1945, the passenger diesels $613,803 in 1947, and the freight diesels $651,240 in 1948. But cognisance must be taken of the fact that the same train and schedule can be worked with less diesel h.p. than steam h.p., and that banking or double-heading over certain sections may be avoided. Traffic failures with the diesels over the first nine months of 1949 averaged one failure per 10,000 locomotive-miles in freight service and one failure per 5,600 locomotive-miles in fast passenger service, the average loss of train time per failure being 42½ minutes.

An interesting table (No. III in the Report) of figures from several railroads is claimed by the reporter to be in close accordance with the Pennsylvania experience noted above. Unfortunately, the units of distance, cost, and rolling stock are not correct; had they been correct, diesel traction would have bankrupted Class I railroads in the U.S.A. It is not practicable to elucidate what the correct values are; the table, therefore, is not reproduced here.

Availability and Utilisation

Availability is stated in the report to be the total time a locomotive is available for service, either working trains or ready to start immediately. Utilisation is the total time a locomotive is working. Naturally the difference between the two should be as small as possible; and availability itself may be increased by good organisation of maintenance and servicing, and by using standard constituents. On the Pennsylvania Railroad the approximate availability of all steam and diesel road engines (not simply the selected modern examples mentioned earlier) is 57·6 per cent. for the former and 75·7 per cent. for the latter. But the utilisation is something much different. Based on average monthly mileage, and an average speed (how obtained is not stated) while actually at work, the percentage utilisation is given as only 12 for passenger steam locomotives and 17·7 per cent. for freight steamers; the values for diesel are 54·8 per cent. for the passenger types and 66 per cent. for freight.

Mileage figures corresponding to the above are 3,881 and 2,553 per month for steam passenger and freight locomotives respectively; and 17,752 and 9,511 for diesel passenger and freight locomotives. Availability and mileage of selected modern types are, of course, much higher than these overall Pennsylvania values, which include steam locomotives of many classes and ages. Figures published in 1947 by P. W. Kiefer, of the New York Central (and to which the reporter refers), indicated that a yearly mileage of 288,000 could be expected as an absolute maximum from the most modern high-speed steam passenger locomotives engaged on long-distance service, along with 63 per cent. utilisation. The same engineer gave 324,000 miles and 70·4 per cent. as the corresponding diesel passenger locomotive figures. Average values from 13 American railroads for the month of June, 1947, reproduced by Mr. Olivier, showed that the passenger diesels covered 18,382 miles a month as a maximum and with 70·9 per cent. utilisation; and the average was 14,514 miles a month and 54·5 per cent. utilisation. In freight service the values from 11 railroads for the same month were 12,254 miles and 83·6 per cent. utilisation as the maxima, and 9,013 miles and 61·7 per cent. as the average.

The rest of the report consists of descriptive matter relating to one or two specific diesel depots in the U.S.A. The conclusions of the reporter are that diesel locomotives show: (*a*) better thermal efficiency leading to lower fuel costs; (*b*) reduction of operating and maintenance costs; (*c*) higher availability and utilisation; (*d*) much longer runs without engine change; (*e*) higher mileage; and (*f*) important reduction in the number of servicing, maintenance and repair facilities.

Signalling on Single Lines

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corded at the supervisor's office. Each guard also has a journal in which corresponding information is entered.

The Algerian lines have various methods of protecting stations, based on French main-line practice, using either Bouré key locking or more complete mechanical frames, and locking at other points. Where traffic is heavy, most lines have fixed signals and some even propose to use light signals in future, as in Norway.

Some sections of line in Belgium are worked with fairly complete station interlocking and point detection combined with an absolute block system effected through the exchange of telephone messages according to a carefully pre-arranged code of regulations. All messages are entered in a block register and the working of the signals is under the control of the stationmaster, if they are not operated directly by him. For siding connections and less important points key locking is applied. The stationmaster can lock up the central apparatus completely by removing a key, should he leave duty for any reason. With this system it is possible to have intermediate block posts and provide safely for special trains running right through the section or not, during, say, temporary switching out of a block post.

As regards purely automatic signalling using light signals, the Belgian National Light Railways have some installations taking power from the traction supply, or specially through rectifiers. The working is controlled by contacts on the overhead trolley wires put in action by the passage of the current collectors on the cars. The signals consist of red and green lights at the entrance to a section with repeater and proving lights there, or at intermediate points in the section. Normally these lights are out but become visible when a train or car arrives at the entrance to a section. Manual control can be brought into operation in the event of any irregularity or special conditions arising, which disturb the ordinary sequence of the signalling movements.

Fifteenth International Railway Congress

Improvements in Rolling Stock Design

The comfort of passengers in coaches, railcars, and electric motor coaches with particular reference to sound proofing, lighting, heating, and stability

MR. O. G. WEBERG, Chief Engineer, Danish State Railways, summarises the answers to Question IV before the International Railway Congress received from the railways of Belgium, Denmark, France (with Colonies and Protectorates), Norway, Holland, and Switzerland.

As regards sound proofing, use of pneumatically-mounted tyres with resilient wheels to reduce noise caused by wheels passing over rails is not extensive; apart from trials, only comparatively lightly loaded axles have been fitted. Such wheels demand special measures in relation to track circuits. In certain cases the use of resilient wheels has caused undesirable vertical vibrations in the vehicle when running at high speeds and reports from the different railway administrations do not differ greatly.

With a view to reducing noise from the wheel on the rail the Swiss Federal Railways have fitted experimentally the bogies of a heavy-type steel coach with resilient wheels. In this particular case the bogie is a special one fitted with eight independent wheels. This vehicle has been chosen for the trial on account of the low static load per wheel, which is up to 3 tons loaded, the maximum permitted figure quoted by the manufacturers. It was hoped in this way to obtain an appreciable reduction in the very considerable noise produced by the large number of wheels fitted to this vehicle. As regards noise the results obtained were not very conclusive, the reduction being relatively small and too little to be appreciated by passengers; furthermore, at high speeds there was throughout the coach a disagreeable feeling of vertical vibration. In view of these negative experiences, the S.F.R. do not consider that it would serve any useful purpose to try resilient wheels on lighter coaches.

Pneumatic Tyres

The French National Railways have not taken any special steps to reduce running noises on its normal stock. Special precautions have, however, been taken on light rolling stock by the use of pneumatic tyres. In this case the wheel has a tyre with an inner air tube of a type similar to that on road haulage vehicles and is termed rail pneumatic by the Michelin Rubber Company; the tyre is provided with a steel flange. The tyre is inflated at a pressure of 9 k.g. and is normally designed to take a load of 1,200 k.g. per wheel. The use of wheels with pneumatic tyres necessitates the use of special devices to allow the short-circuiting of lines of rail. These devices consist of shoes in contact with the running rails and arranged to allow the transmission of electric current with the minimum of resistance. To avoid noises arising from the brake rigging, and so on, it is necessary to avoid, as far as possible, movable parts, to reduce to an absolute minimum the use of flaps on inspection doors, to cover the contact surfaces of sliding parts with wood, rubber, leather or felt, and to support the long control rods of the brake rigging by hangars or other supports and to fit rubber to those parts of the control rods which come into contact with the supporting hangars. It is important that the brake rigging should be carefully adjusted at the various joints and have pivots and sockets in a special steel. The Netherlands Railway have in all modern carriages, arranged the brakework entirely within the bogies, and so removed the principal cause of the creation of noise.

The French National Railways have mounted the electric dynamo on the bogie by means of an axle passing through special rubber rings and located the carriage lighting booster (rotary motor) on the chassis by means of rubber shock-absorbers.

To reduce drumming of steel panels, several administrations applied to the interior surfaces of the panels vibration-damping materials, generally of textile or asbestos base, glued or sprayed. The Danish State Railways cover panels with granulated cork fixed with varnish; several administrations have fitted strips of flannel under fillets and beading.

Insulation of Body

In the modern trailer vehicles of the S.N.C.F., rubber or other inserts are not used between bogie and body, previous experience having shown that there is no appreciable improvement. Armoured rubber inserts have also been tried on Pennsylvania type bogies, between the equalisers and the helical springs but have not been retained for the same reason. In recent Pennsylvania bogies there is only oak packing between the upper buckle of double laminated springs and the swing bolster. At the same time trials are being carried out using rubber packing between equaliser and oil axle-box to damp vibration in the equaliser and reduce fatigue. The Belgian National Railways have fitted the inner walls of new vehicles with an insulating material which has acoustic and thermic properties. The material used is glass wool of very fine fibre (6 microns max.) used in 30-mm. pads. In modern Danish coaches, the triple walls of first-class compartments have interior surfaces sprayed with flockage. The corrugated metal floor is insulated thermally and acoustically, the corrugations of the upper surface are filled with cork glued to the metal. Trials in France with insulating materials illustrate the difficulty of the problem, especially in regard to noises penetrating open windows.

Some railcars of the French National Railways with an axle loading up to 9 tons were fitted with movable wheels of specially hard steel with narrow rims (approximately 15 m.m. when new). These wheels gave rise, particularly when passing over rail fittings at low speed, to a fairly pronounced ring. This has been very noticeably reduced by applying to the face of the wheel near the rim a rubber ring of 15 mm. thickness held in position by a plate disc secured by bolts. On railcars now in service the width of the rim of the monobloc wheels has been increased from 15 to approximately 25 m.m. for purposes of longer wear, and this defect no longer exists; the rubber ring has been eliminated. Bugatti railcars having two four-axled bogies, are fitted with deadened wheels; the amount of resilience in these wheels is small, about 3 m.m. under the maximum load of 2,400 k.g., and they provide a small reduction in the amount of noise.

Resilient wheels have been tried on the bogies of a railcar with electric transmission (maximum speed 120 k.m.) and a maximum axle load of 9·5 tons. The behaviour of the wheels has been satisfactory after a mileage of 217,500 miles; the reduction in noise is noticeable to the ear, but very small. With a view to eliminating noise from internal-combustion engines in railcars, attention has been given to the fitting of suitable silencers and mounting the motors on bearings of rubber or other materials.

Regarding gear noises, attempts are being made to combat these by use of gear wheels with ground teeth and careful lubrication of the gearing. Suspension of the traction motors and lighting dynamos includes rubber mountings to reduce the propagation into the vehicle of noise from these components.

Lighting

In the case of accumulators, automatic recharging by axle-driven or motor-coupled dynamos is preferred. The use of fluorescent tubes for lighting is increasing. Removal of light fittings by the public is sometimes prevented by a grill and the marking of lamps with the name of the owning administration, or by using special sleeves not available to the public.

Steam heating of carriages is generally effected at a pressure in the main steam pipe of 44-6 kg./cm.^{2} (56-85 lb. per sq. in.) according to the outside temperature and the length of the train, but the pressure varies somewhat between administrations. The low-pressure systems most often used are Westinghouse,

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Design of Marshalling Yards

Modern layout and equipment, and technical methods employed

IN their report to the International Railway Congress for consideration at the 1950 session in Rome, Messrs. J. I. Campbell, Chief Engineer, Eastern Region, and J. W. Watkins, Operating Superintendent, London Midland Region, British Railways, deal with the developments that have occurred since the subject was discussed at the Madrid session in 1930. The report summarises replies to a questionnaire circulated to railway administrations in or connected with the English-speaking world. Of administrations addressed, four returned detailed replies; the Pennsylvania Railroad, British Railways, South African Railways & Harbours and the Indian Railway Board. As only one railway in the United States replied, and as greater developments have taken place in that country than in any other, information regarding yards on other American systems has been embodied in the report from other sources.

Opinions differ upon the relative merits of retarder, hump, and gravitation yards, and particularly as to the economic datum line at which it pays to mechanise with retarders. Any and all developments must ensure such economies as will furnish a reasonable return on the outlay involved. The various siding groups in a large marshalling yard must be so designed as to provide the most expeditious service at the lowest cost. In planning a yard as a whole, a number of separate units, each with its own function, have to be designed and so placed that all operations are progressive and hindered as little as possible by conflicting movements. Each unit, whether it consists of equipment or a complete layout, should be designed to suit peak and average demands likely to be made upon it, and sited so as to fit into the complete scheme. The long and generally accepted principle for large yards is that their groups of sidings should be laid out in sequence for (1) the reception of trains, (2) the sorting of vehicles into direction or destination order, and (3) holding made-up trains ready for dispatch. Other groups are also required for subsidiary shunting, stabling spare vehicles, wagon repairs, and for facilitating connecting and through services. However, each yard has to be considered as a complete and individual economic operating and engineering problem, taking into consideration site and space limitations; it cannot be designed to conform to any standard type.

Double-Direction Yards

Separate yards to cater for opposing flows of traffic have in no instance been combined in the interests of economical working, but at Naihati, on the East Indian Railway, where there are separate up and down hump yards, one of them (equipped with retarders and electrically-worked points) is used to sort both up and down traffic. Also, at North Platte, on the Union Pacific Railroad, there is a large double-direction yard, in which the east- and west-bound tracks pass round the perimeter of the site, and two receiving and two dispatching groups are placed side by side at the west and east ends respectively, with one retarder sorting group in the centre. Such yards have to be carefully designed to avoid interference between conflicting shunting operations. There are also many one-direction yards that have to deal with a small volume of traffic in the opposite direction.

Where a separate group is necessary for marshalling vehicles in a particular order before departure, it is generally laid out parallel to the main sorting group. A separate departure group, if necessary, should be in sequence beyond the sorting group. Other separate groups may be required to accommodate trains stopping at a yard for purposes other than shunting, or where a considerable amount of traffic has to be detached for attaching to other outgoing trains and does not require to be shunted in the ordinary sense.

Siding Group Capacity

Reception lines, it is suggested, should be 7 per cent. longer than the longest incoming train, but administrations differ as to whether lines in sorting groups should be 25 or 50 per cent. longer than the longest outgoing train. The number of lines in a reception group must depend on the maximum number of trains expected from the main line during any period and the number that can be cleared by shunting. In a sorting group there should be sufficient lines to permit at least one siding being allocated to each direction or destination, consistent with the volume of traffic offering. It is important that trains should be made up complete for the most distant yard or depot possible, so as to eliminate shunting at intermediate points, to speed up traffic movement and vehicle turnround, and to economise engine usage. With the balloon type of sorting-yard layout, the probable reasonable limit to the number of sidings is 40, arranged in 4 fans each of 10 sidings. Departure groups may be considered as performing the reverse functions to the reception lines, and so similar considerations should apply to them. There should be sufficient lines to hold the number of trains necessary to keep the sorting sidings fluid, and at the same time hold sufficient trains during main line peak occupation. The number of lines in the marshalling group must depend on local requirements and conditions.

Considerations of Layout

In designing the layout of a yard, special attention should be paid to the connections at the entrance to and outlet from reception lines, and to run-round arrangements for humping engines and for releasing train engines; adequate provision for brakevan movements is equally important. Another point to remember is that these connections should not increase the distance trains have to move when slowly approaching the hump. Leads to separate engine release lines should preferably be on the steep initial gradient beyond the hump, provided that these engines can negotiate the vertical curve at the apex. A separate track should be provided for the humping engine to return to the rear of the trains, and for drawing rakes out of the sorting group. No general rules can be laid down with regard to the most suitable permanent way for hump yards, but the use of new material for laying track at key points in important yards is amply justified.

To facilitate free running of vehicles down from the hump in cold weather, hot oil is injected into the axleboxes in America, and in Great Britain some hump yards with no retarders have the apex of the hump raised slightly in winter. Hump-yard turnouts and crossings are generally of the ordinary types, 1 in 7½, 1 in 8, and 1 in 8½ crossings being normal. The use of three-throw points and turnouts and tandem (lapped) leads is an effective means of economising space, the distances between apex and clearance points being reduced by 90 ft. and 60 ft. respectively. Check-rails in crossing work should be as short as possible so as to reduce track resistance. The fitting of rail lubricators is common practice in American yards, and they are also increasingly being used in the United Kingdom.

Siting

Sites for hump yards are easier to find than those for gravity yards, but the difference in levels at the inlet and outlet must be limited. The apex of the hump should not be more than 12 ft. to 18 ft. above the lowest level of the sorting yard. The gradient of the approach to the hump should be sufficient to facilitate the uncoupling of vehicles, but in most British and some American yards the last 100 ft. or even 200 ft. steepen to 1 in 40 or 1 in 50 in the former, and slightly easier grades in the latter. The vertical curve at the apex must be designed to give quick separation of cuts, but the necessity for

working engines over the hump should be borne in mind. The usual vertical radii are about 600 ft. in Britain and 2,400 ft. in America.

Retarders are used to regulate the spacing between cuts having different running characteristics—largely a matter of weights—and to control the gravitation of vehicles into the sorting sidings. No new basic principles for retarding vehicles have been introduced since 1930, but the designs of the retarders have been improved, as described below. In almost all British yards the retarders are placed between the secondary and tertiary leads to fans of not more than 10 sidings. In this position they provide the "distance" and "interval" braking required for satisfactory running onwards. In the United States retarders are generally in advance of the primary, secondary, and tertiary leads; the final retarder covers a fan of not more than eight tracks. Skates are used in both British and American yards when necessary. In America they are remotely controlled and are used to check excessive speed of vehicles after passing retarders. British skates are placed by hand, usually to establish the head of a train.

In Great Britain and India the hydraulic type of retarder is almost always used, whereas the electro-pneumatic and all-electric types are preferred in the United States. The latest type of British retarder has in its concrete foundations an inspection pit 7 ft. high and 6 ft. wide; access to the pit is provided by a 1 in 8 ramp, and a subway connects the pits under a group of four retarders. The hydraulic retarder mechanism has been improved by the substitution of oil for water, as this improves its working and obviates the necessity for heating to prevent freezing. Compressed-air accumulators in the pumping equipment are an improvement on the older weight-loaded system, and other new details make for greater efficiency.

The electro-pneumatic retarder now grips the wheel in "nut-cracker" jaws and needs no foundations other than ballast. Concrete slabs are, however, laid under the ballast in some American yards. Equal pressure on both sides of the wheel is assured by the self-adjusting pivotal movement of the jaw head, and added rigidity is obtained with the latest arrangement of shoes and beams. Being above ballast level all parts are easily accessible. The braking force is entirely controlled by the operator, and the retarder units on the two rails of a track are independent of one another, and one only can be installed if desired; track-circuiting is made possible by the absence of metallic connection between the two units.

Automatic Point Operation

The general tendency is towards extension of automatic control of point operation in hump yards with or without retarders. The system may be automatic (wherein the route is set throughout) or semi-automatic, where it is partly set, point movement being controlled by track-circuit. In seven of the nine British yards mentioned in the report the points are worked by compressed air of 30-lb. to 50-lb. pressure. The points are not bolted, but electric indication is provided. In the other two (Whitemoor) yards the point machines are all-electric, working at 110 V. d.c.; in the larger Indian yards they are also electric. In the United States both all-electric and electro-pneumatic systems are in general use.

In British retarder hump yards "normally de-energised" track-circuits are installed, the movement of the points being controlled by a vehicle clearing a track-circuit extending for a short distance in advance of and beyond the points. The total track-circuit length must be longer than the longest vehicle so as to hold the points under it; in advance of the points the track-circuit length should be sufficient to allow enough time for the operation of the relays and points. The control circuit is so arranged that, if movement has begun when a vehicle enters the circuit, the points can complete their travel. The selection of suitable lengths of track-circuit in advance of and beyond the points is considered most important, as the speeds of vehicles vary greatly according to the amount of retardation required to suit light slow-running or heavy fast-running vehicles.

Control of automatic and semi-automatic point movement should be effected from a tower beside the switching area or a special hump building. Non-automatic points are worked from the towers also.

In some recent installations, storage of point movements for the various cuts is now carried out before humping begins. When automatic or semi-automatic point control is effected from the hump building, "storage" for about eight cuts is provided, and the appropriate route buttons are depressed as vehicles pass the apex. A system of progression relays continues the control of point movements for cuts already in the track-circuited switching area. Advance preparation of cut lists is not necessary at yards where fully and semi-automatic point operation is carried out from a hump building, so long as the operator can observe the siding number chalked on the leading end of the approaching cut and transmit the siding number and cut particulars to the point and brake operators in the control tower. The transmission of these particulars in two recent installations takes place after both the route and cut buttons in the hump building are depressed, and this information is printed on bands of paper at the operators' positions in the towers as the cuts pass over the hump.

Cut Lists

Cut lists are used where point operation is carried out from control towers adjacent to the switching areas. In some British yards the lists are sent in pneumatic tubes from the hump to the tower before humping begins. In American yards trainmen's lists are also conveyed in such tubes from the yard inlet to the yardmaster's office, where cut lists are prepared and forwarded to the towers and hump by teleprinter or pneumatic tube. If train lists are sent by teleprinter, reperforating tapes may be used to repeat cut information to key points in the yard.

The method of controlling the movement and speed of trains approaching the hump is by means of various types of humping signals. Those usually provided give at least four aspects, namely, "stop," "hump slow," "hump normal" or "hump fast." The signals are either semaphore, colour-light, or position-light and are repeated as local conditions dictate.

Improvements in Rolling Stock Design

(*Concluded from page* 334)

Pintsch, and Vapor Car Heating. In addition, several railways use warm air equipment, heated by steam, frequently with automatic control. In side-corridor coaches, radiators are usually arranged below the side lights and under the seats as also are the warm air injector ducts in the case of this type of heating. In certain cases steam heating is also provided in railcars, to allow normal steam-heated coaches to be used as trailers, but steam heating is not provided anywhere in rail motor coaches.

Electric heating of carriages is generally at voltages of 1,000, 1,500 and 3,000 V. according to the use to which coaches are put. Heating is by radiators or by warm air. In railcars, electric heating is used only occasionally and as a supplementary means.

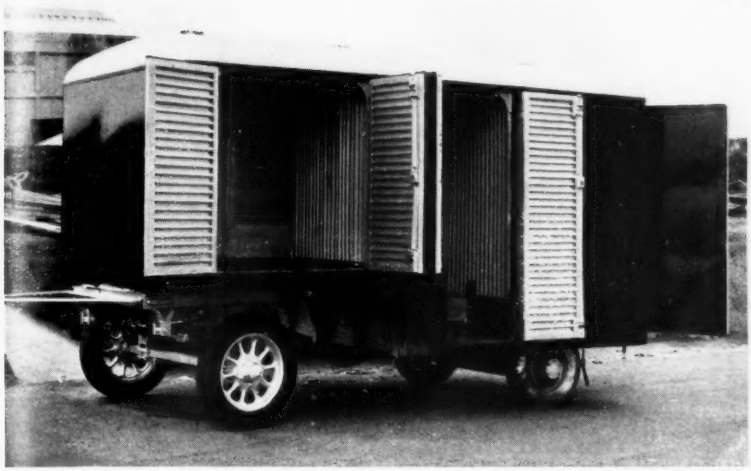
Hot water heating, which allows vehicles to be used in either steam or motorised trains (as each vehicle can be heated independently) tends to be discontinued in view of the risk of freezing in winter.

Methods of heating railcars differ, as, for example, by the use of the motor cooling water or by a fuel oil burner with thermostatic on/off control. Heating by motor exhaust gas is also used. The regulation of heating is by train staff or passengers; with centre-corridor vehicles control is frequently exercised by the train staff. In some cases there are thermostats, which are designed to stop or start the heating at specified temperature limits.

Bogies with swing bolsters are the most common type, but bogies without swing bolsters are also frequently used or are being tried by some railways. As regards the use of rubber mountings for the pivot socket or other body support, opinions differ, though such fittings are often used with spring suspension. Vertical oscillations are damped by friction or by hydraulic absorbers, the latter being used also for horizontal oscillations.

Container-Trailers in South Africa

A door-to-door delivery service for furniture and general goods combining the advantages of road and rail transport



THE South African Railways are offering a direct door-to-door delivery service for household furniture and general merchandise by means of mobile container-trailers. These specially-designed vehicles, which were exhibited at the recent Rand Agricultural Show, can be operated as ordinary road vans and are so constructed that they can also be transported bodily by rail over long distances. The flexibility of road transport and the cheapness of rail conveyance have, therefore, for the first time in South Africa been successfully combined in one vehicle. Even more important from the point of view of the railway-user is that goods are packed in the container-trailers at the sender's premises and are not handled intermediately until they are delivered at the consignee's door; packing cost is reduced to a minimum and the need for expensive returnable packages eliminated.

The advantages of conveyance in a self-contained sealed unit should have a powerful appeal for the public. An entire vehicle may be used by one consignee, or the container-trailer may be used by two or three separate senders. Each trailer can carry three tons, and has a capacity of 522 cu. ft. and is fitted with hinged partitions permitting division into three separate compartments. Not only is a road-rail-road service provided, but apart from the locking of the three compartments by the Administration the sender is himself permitted to seal the compartments so that at destination the consignee can satisfy himself that the seals are intact before unloading.

Among the special features of the vehicle are insulation against heat and protection against all adverse atmospheric conditions; maximum manœuvrability for trucking and entry into warehouses through narrow lanes; and suitability for haulage by a "mechanical horse," or as an ordinary four-wheeled trailer drawn by a tractor or lorry.

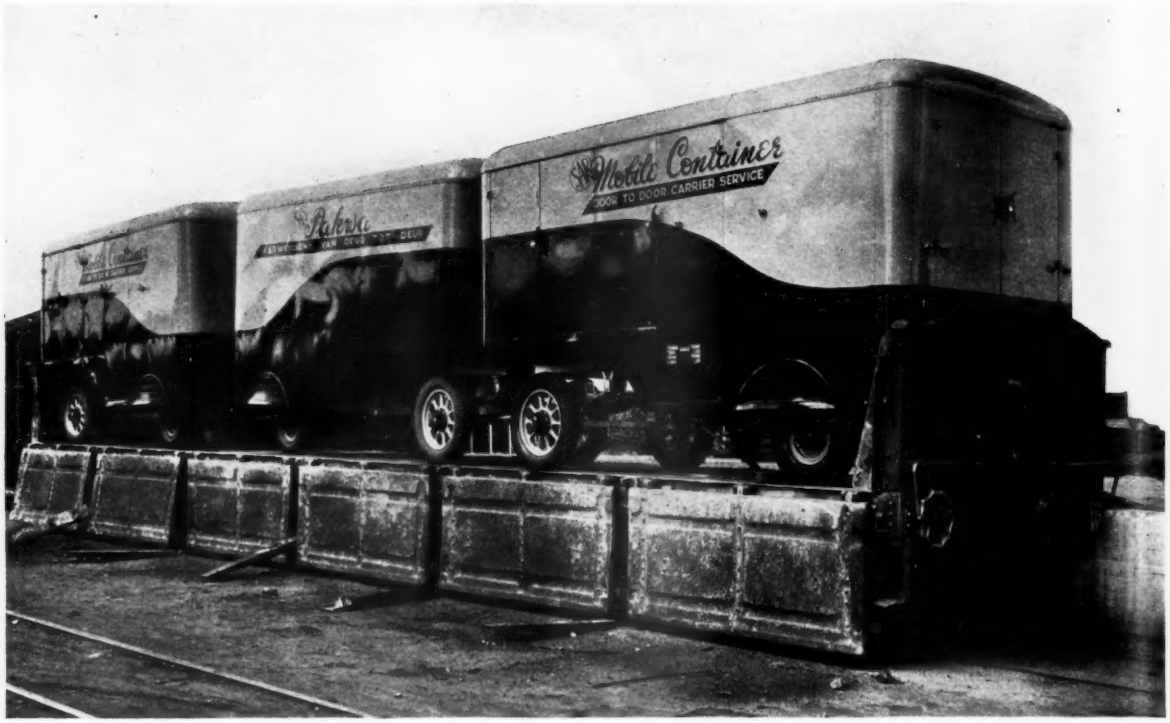
Three doors are provided, two at the side and one at the back of the vehicle; in addition two sliding partitions are arranged inside the vehicle to permit of three separately sealed consignments being loaded at the same time. Alternatively, the inner partitions may be folded against the sides to form one compartment.

Quick Loading

Care was also taken to ensure quick loading and secure lashing in trucks; three containers can be accommodated in a drop-sided bogie truck. The fore-carriage can turn through a right-angle and the container-trailer may thus be turned in a radius of rather less than its own length, which allows quick loading and offloading. Insulation against varying temperatures is provided by the insertion of plastic in cellular forms between the inner and outer body panels.

Articles particularly suited to conveyance by container-trailer include general merchandise from wholesaler to retailer, goods distributed by large

Road transport of container-trailer by the South African Railways



Three container-trailers in use on the South African Railways loaded on a bogie wagon

firms to their own branches, and manufacturers' and distributors' wares, in addition to furniture and household goods.

Indeed, the uses to which the container-trailer may be put are almost limitless and once it becomes known that the risk of damage or pilferage in transit can virtually be eliminated by this mode of conveyance, and that rapid transit is assured, the demand is expected far to outstrip the number of container-trailers now in service. Preparations are accordingly in hand to meet this position, and at the same time a special study is being made of modifications in design to suit specific requirements.

Transport of Chemicals on British Railways

London Midland Region train conveying soda silicate in special tanks (see paragraph in our September 22 issue)

RAILWAY NEWS SECTION

PERSONAL

Mr. C. R. Dawson, Home Sales Manager, Ruston & Hornsby Limited, has been appointed Manager of The English Electric Co. Ltd., Sales & Contracts Department, Diesel Engine Division, at Rugby.

Mr. David W. Brisbane, M.I.C.E., M.I.Struct.E., M.I.C.E. (Australia), who, as recorded in our August 4 issue, has retired from the General Managership of the Midland Railway Co. of Western Australia Ltd., has been appointed Chairman of the West Australian board of directors of the company. He was born in Melbourne, Australia, in 1888 and was educated at Scotch College, Perth, and Perth Technical College. In 1908 he became a civil engineering cadet with the Public Works Department, Western Australia, and four years later, as an Assistant Engineer in the Public Works Department, he was engaged on railway construction and water supplies. Mr. Brisbane was appointed Divisional Engineer, Federated Malay States Railways, in 1919, and was concerned with railway construction and other works until 1923, when he became Managing Director, Fogden, Brisbane & Co. Ltd., of Singapore, public works contractors. During the next 12 years he carried out many large public works for the Straits Settlements and Federated Malay States governments, and for the Admiralty, War Office and Air Ministry in Singapore, Malaya and Hong Kong. From 1935 to 1941 he was Consulting Civil Engineer, Singapore, and he joined the Royal Australian Navy in 1942. The following year he was released by the Royal Australian Naval Board to take over management of the Midland Railway Co. of Western Australia Ltd., which was then engaged in heavy defence movements. Among other positions he holds are those of Director of West Australian Newspapers Limited, Western Collieries Limited, and Beam Transport Limited, West Australian Director of Colonial Mutual Life Assurance Society Limited, and Kelly & Lewis Limited.

Mr. David W. Brisbane
General Manager, Midland Railway of Western Australia 1943-50

Mr. John S. Dowson
Appointed General Manager, Midland Railway of Western Australia

Mr. John S. Dowson, M.B.E., A.M.I.C.E., A.M.I.E. (Australia), Assistant General Manager, Midland Railway Co. of Western Australia Ltd., who, as recorded in our August 4 issue, has been appointed General Manager, was born in Western Australia in 1906. He joined the Western Australian Government Railways in 1923 as a civil engineering cadet, and on completing his indentures remained with that railway as Engineering Assistant until 1930, when he was appointed Assistant Executive Engineer, Indian Railway Service of Engineers. After serving with the G.I.P.R. in various positions Mr. Dowson was commissioned in the Royal Indian Engineers in 1941. He saw active service with the 10th Army in Iraq and with the 14th Army in Assam and Burma, attaining the rank of Major. In 1944 he was released from the Army at the request of the Indian Government and for over a year served with the Bengal & Assam Railway, during the greater part of which time he was Executive Engineer in charge of construction of the Beki River Bridge, Assam. He returned to the G.I.P.R. in 1945 and was appointed Executive Engineer-in-Charge Surveys. On the termination of his contract with the Secretary of State for India in 1947, he resigned from the Indian Railway Service of Engineers, and the following year was appointed Assistant General Manager of the Midland Railway Co. of Western Australia. Mr. Dowson was awarded the M.B.E. in 1948 for work as Executive Engineer-in-Charge Surveys, G.I.P.R. He is an Associate Member of the Institution of Civil Engineers, and an Associate Member of the Institution of Engineers, Australia.

The Eastern Region of British Railways has announced that Mr. H. Unwin, District Mineral Agent, Sheffield, has been appointed Assistant (Mineral), Commercial Superintendent's Office, Doncaster. He entered the service of the Great Central Railway in the goods department at Chesterfield in 1908, and moved to the office of the Mineral Manager, Chesterfield, in 1913. Mr. Unwin was appointed District Mineral Inspector, Sheffield, L.N.E.R., in 1928, and took up the position of District Mineral Canvasser, Sheffield, in 1939; he was appointed District Mineral Agent, Sheffield, in 1943.

Mr. R. Cogger

Assistant Signal & Telecommunications Engineer, Southern Region, who has retired

Mr. A. W. Damon

Appointed Assistant Signal & Telecommunications Engineer, Southern Region

Mr. G. J. Dickins

Appointed Principal Development Assistant to Development Officer, London Transport Executive

We regret to record the death on September 16 of Mr. C. W. James, Stationery Officer, Western Region, British Railways.

Mr. R. Cogger, M.B.E., Assistant Signal & Telecommunications Engineer, British Railways, Southern Region, who, as recorded in our August 18 issue, has retired, commenced his railway service in 1901 on the S.E.C.R. After a period of four years, during which time he visited Africa, Mr. Cogger returned to the S.E.C.R. in 1914. He became an inspector in 1925 and was appointed Chief Inspector in 1933, during which time he was closely associated with the various colour light installations on the Southern Railway. In 1941 he joined the headquarters staff at Wimbledon, as Outdoor Assistant, and in 1947 he became Assistant to the Signal & Telecommunications Engineer. Mr. Cogger was awarded the M.B.E. in 1943 in recognition of his work in connection with repairs to damage caused by enemy action.

Mr. A. P. van der Post, late senior trade commissioner for the Union of South Africa in the United Kingdom, has been appointed a director of the Forestal Land, Timber & Railways Company.

The following notifications appeared recently in *The London Gazette* under the heading of Regular Army Reserve of Officers, Royal Engineers:—

Captain B. X. Jessop to be Major, January 1, 1949, retaining the honorary rank of Colonel.

Captain A. L. Allpress to be Major, March 17, 1948.

Lieutenant G. R. M. Robinson to be Captain, October 9, 1948, retaining the honorary rank of Major.

Mr. D. W. Cameron, General Superintendent of the Schenectady Works of the American Locomotive Company, has been appointed Manager of Operations, Montreal Locomotive Works Limited. He was born in New Glasgow, Nova Scotia, and started his career in the locomotive industry in 1917, as an apprentice machinist, with the Montreal Locomotive Works. After serving two years in the Royal Canadian Air Force Mr. Cameron returned to complete his apprenticeship. He was transferred to Schenectady in 1925 and in 1944 was appointed Superintendent Co-ordinator of the works there; he became General Superintendent, Works, in 1947.

Mr. A. W. Damon, Outdoor Assistant, Signal & Telecommunications Department, British Railways, Southern Region, who, as recorded in our August 18 issue, has been appointed Assistant Signal & Telecommunications Engineer, began his railway career as an apprentice at Wimbledon in 1926. He joined the drawing office staff in 1928 and obtained particular experience in the field of power signalling. In 1938 he was appointed as Assistant for New Works, and became Assistant for Power Signalling & New Works the following year. Mr. Damon was on war service from 1939 to 1945, with the Royal Corps of Signals, and attained the rank of Major. He was twice mentioned in despatches and was awared the M.B.E. (Military Division). On returning from the services in 1945, Mr. Damon resumed his former position, and was appointed Outdoor Assistant in 1947. He is a Member of the Institution of Railway Signal Engineers.

Mr. R. E. FitzGerald, London Agent, Rhodesia Railways, who has retired, was born in 1887 and joined the staff of the British South Africa Company in 1904; after a short training in other sections he was transferred to the railway department. He joined the Artist Rifles in 1914, and subsequently was commissioned in the Royal Army Ordnance Corps. He served in France and Russia and rose to the rank of Lt.-Colonel, before returning to the railways in 1919. Mr. FitzGerald held the post of Assistant Secretary, Mashonaland Railway Co. Ltd. from 1913 to 1924, and was Secretary from 1925 to 1937. He was Secretary, Rhodesia Railways Limited, from 1925 to 1930, and between 1931 and 1948 he held the combined post of London Manager and Secretary; Mr. FitzGerald was appointed a Director in 1938. Subsequently the newly nationalised Rhodesia Railways appointed him as London Agent. In connection with his other administrative posts, Mr. FitzGerald held directorships and secretaryships of the Beira Port Companies, and the Shabani Railway Company.

Mr. G. J. Dickins, A.M.Inst.T., previously Divisional Superintendent (North) (Trams & Trolleybuses), London Transport Executive, who, as recorded in our August 11 issue, has been appointed Principal Development Assistant to the Development Officer, joined the service of the London Electric Railway Company as a junior clerk in 1913. During the 1914-18 war he was a Flying Officer in the Royal Flying Corps and the Royal Air Force. He was transferred to the London General Omnibus Company as a traffic observer in 1926, and subsequently served in the Country Bus & Coach Department from 1930 to 1946. He was appointed Acting Divisional Superintendent (North) (Trams & Trolleybuses) in 1946 and Divisional Superintendent (North) (Trams & Trolleybuses) the following year.

Mr. Francis Lydall—An Appreciation

The following appreciation was contributed by Lord Hurcomb to a recent issue of *The Times*:—

Those who knew Francis Lydall not only as a dispassionate professional adviser but as a personal friend will miss a man of particular grace of mind. He was a leading authority on the electrification of railways, to which he had devoted his whole life, first on the manufacturing side with Siemens Brothers & Company, and since 1917 with the consulting engineering firm of Merz & McLellan, of which he became a partner in 1927.

He was primarily responsible for reporting on and supervising the carrying out of the two most extensive main line electrifications in the Commonwealth, that from Glencoe-Pietermaritzburg in Natal, and that from Bombay over the Western Ghats. India always greatly interested him. He knew it and its people well and visited it eight times over the period 1917-1948.

Latterly and to within a few weeks of his death he had been advising British Transport on questions involving the future of railway electrification in this country.

British Transport Commission Statistics (Period No. 7)

Summary of the principal statistics for the four-week period ending July 16

STAFF

—	B.T.C. Head Office	British Railways	London Transport	British Road Services (Road Haulage)	Road Passenger (Provincial & Scottish)	Hotels & Catering	Ships & Marine	Inland Waterways	Docks, Harbours, Wharves	Railway Clearing House	Commercial Advertisement	Legal	Films	Total
Number ...	223	618,900	98,900	74,253	61,776	18,610	6,604	5,080	19,960	638	185	278	24	905,431
Inc. or dec. ...	—	−1,378	−135	+188	+426	+159	−167	+13	+96	+2	−1	—	−1	−798

BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

—	Four weeks (Period No. 7) To July 16, 1950	Four weeks (Period No. 7) To July 16, 1949	Aggregate for 28 weeks 1950	Aggregate for 28 weeks 1949
	£000	£000	£000	£000
British Railways—				
Passengers	10,322	11,504	54,672	58,430
Parcels, etc., by passenger train	2,505	2,370	15,758	15,364
Merchandise	7,028	5,965	44,993	43,895
Minerals	2,594	2,236	16,982	16,089
Coal & coke	6,274	5,306	40,189	37,306
Livestock	81	48	595	581
	28,804	27,429	173,189	171,665
British Railways—				
Delivery & other road services...	777	702	4,900	4,726
Ships and Vessels	1,177	1,148	4,987	4,859
London Transport—				
Railways	1,065	1,071	7,682	7,790
Buses & coaches	2,448	2,491	16,568	16,841
Trams & trolleybuses	814	845	5,723	5,904
	4,327	4,407	29,973	30,535
British Road Services—				
Freight charges, etc.	4,925	2,762	31,804	13,137
Road Passenger Transport	3,433	3,245	19,220	18,117
Docks, Harbours & Wharves ...	988	894	6,308	5,820
Inland Waterways	136	114	852	823
Hotels & Catering	1,180	1,082	7,500	6,927

LONDON TRANSPORT

—	Passenger journeys	Inc. or dec. per cent. over 1949	Car miles	Inc. or dec. per cent. over 1949
	000		000	
Railways	47,375	−0·1	17,900	−0·2
Buses & coaches	216,561	−0·1	24,654	−1·0
Trams & trolleybuses	89,155	−2·5	8,556	−0·9
Total	353,091	−0·1	51,110	−0·2

INLAND WATERWAYS
Tonnage of traffic and ton miles

—	Tonnage	Inc. or dec. per cent. over 1949	Ton miles	Inc. or dec. per cent. over 1949
	000		000	
Coal, coke, patent fuel & peat	464	+7·5	7,092	+7·5
Liquid in bulk	127	+2·4	3,131	+4·0
General merchandise	304	+4·3	5,199	+9·4
Total	895	+5·7	15,422	+7·4

BRITISH RAILWAYS
Rolling Stock Position

—	Operating stock	Number under repair	Available operating stock	Serviceable stock in 1949
Locomotives	19,259	3,229	16,030	16,072
Coaching vehicles	57,324	4,401	52,923	51,194
Freight wagons...	1,100,309	102,093	998,216	1,020,193

BRITISH RAILWAYS
Passenger Journeys (Month of May, 1950)

Full fares	Monthly returns	Excursions, cheap day, etc.	Other descriptions	Workmen	Season tickets	Total	Inc. or dec. per cent. over 1949
4,397,000	15,666,000	17,509,000	4,350,000	18,970,000	19,905,000	80,797,000	+1·73

BRITISH RAILWAYS
Freight Tonnage Originating and Estimated Ton-Miles (Period No. 7)

—	Minerals	Merchandise	Coal & coke	Livestock	Total	Inc. or dec. per cent. over 1949
	000	000	000	000	000	
Tons originating ...	4,570	3,947	12,730	46	21,293	−0·54
Ton-miles	381,195	501,008*	817,252	—	1,699,455	+0·58

* Includes livestock

BRITISH RAILWAYS (Period No. 7)

—	Total steam coaching train-miles	Total electric coaching train-miles	Total freight train-miles	Freight train-miles per train engine-hour	Net ton-miles per total engine-hour	Locomotive coal consumption: Total tons	Locomotive coal consumption: Lb. per engine-mile
	16,274,000	3,844,000	10,885,000	8·8	595	1,037,000	58·8
Inc. or dec. per cent. over 1949	+0·6	+4·1	+0·7	+1·1	+3·5	−0·6	+0·1

The Antofagasta (Chili) & Bolivia Railway Co. Ltd.

Increased receipts, but rapidly rising costs, and large wage increases

The sixty-second annual general meeting of the Antofagasta (Chili) & Bolivia Railway Company was held on September 26 in London, Mr. H. C. Drayton, Chairman, presiding.

The Chairman, in his statement circulated with the report and accounts, said that although goods traffic in 1949 fell by 80,754 tons to 1,218,872 tons, gross receipts at £3,539,135 were higher by £581,095, due to the higher tariffs in force during the greater part of the year; increases in tariffs were authorised by the Governments of Chile and Bolivia to offset very considerable increases in wages, social law contributions and the cost of operating materials. The most important decreases in goods traffic were in copper bars from the Chile Exploration Company, Chuquicamata; of sulphate of soda from the Aguas Blancas Railway; and of petroleum products for Chile and Bolivia. In Bolivia, increasing local supplies of gasolene were displacing imports. The tonnage of several commodities, however, had much increased, as of nitrate, equipment for the mining industry, cereals, and flour. The number of passengers increased from 489,649 to 510,339, and receipts rose by £34,503 to £215,341; the revenue from baggage and parcels also increased by £27,296 to £83,035.

There was a loss of £7,926 on working the Aguas Blancas Railway compared with a profit of £2,307 in 1948, due entirely to the decline in traffic. The loss on operating the Bolivia Railway increased from £157,271 in 1948 to £181,253. They had to pay a rental to the Bolivia Railway Company of 40 per cent. of the gross receipts, and in today's conditions it was impossible to work to a 60 per cent. operating ratio.

New Locomotives

In addition to £80,814 debited direct to working expenses, £119,186 had been appropriated from the net revenue account to the provision for renewals, making a total of £200,000. This was to help meet the heavy charges to renewals in respect of the six Garratt locomotives to be shipped to Bolivia in 1950. After allowing for charges less credits during the year, the balance on the renewals account at the end of 1949 was £1,714,995, compared with £1,576,901 at the end of 1948. In 1947 the Bolivian Government approved a special tariff increase, provided this was applied to the purchase of rolling stock for use on the Bolivian section, and funds collected under this arrangement had helped them to purchase the locomotives now on order. During the year it was expected that new locomotives and plant costing in the neighbourhood of £235,000 would be shipped.

In Chile and Bolivia the cost of nearly all commodities continued to rise. On both sections the company was obliged to concede further wage increases. On the Chilean section the labour position remained tranquil, and it was possible to arrive at a settlement with employees on all questions in a friendly manner. In Bolivia, however, a strike of the company's employees occurred in May, 1949, in connection with the categorisation scheme, and strike threats were made for one cause or another during the year.

When, in 1952, the Chilean Exploration Company's sulphide plant at Chuquicamata was in operation, their existing locomotives and rolling stock would be insufficient to handle the new traffic. Heavy main-line locomotives and oil tank cars and ore cars would have to be bought, and a study of the position was being made to decide minimum requirements.

Traffic over the portion of the Northern Transandine line worked by the company on account of the Chilean Government had been disappointing. Weather conditions had been bad, and in May, 1949, a landslide resulted in a suspension of traffic for 25 days.

Rolling Stock Position

It had not been possible to place orders for the first class coaches to which reference was made in the Chairman's last statement. Delivery dates were uncertain and prices high, and until the company's financial position improved, coaching stock must take a lower priority than locomotives when funds for additional stock became available. Every effort was being made to improve the position by introducing fast day trains between La Paz and Cochabamba, releasing sleeping cars for use in the international trains. Second class passenger traffic was heavy, but not remunerative, and because of road competition it was considered inadvisable to raise passenger fares in 1949. During the present year, however, the price of gasolene had increased, and the latest information was that this had the effect of raising road fares, which should put the railways in a position to increase their passenger rates. The goods stock position had been improved slightly during the year by the transfer from the Aguas Blancas Railway and conversion to metre gauge of flat wagons for internal service on the Chilean section.

The Governments of both Chile and Bolivia had again given sympathetic consideration to their request for authority to increase tariffs to cover the increased working costs, and in April, 1950, tariff increases of 30 per cent. in Bolivia and, in July, 33 per cent. in Chile had been approved. Experience during the next six months would show if these increases were adequate.

The report was adopted.

New Southern Region Suburban Fares

Effect of the London Area Passenger Charges Scheme

Mr. C. P. Hopkins, Chief Regional Officer, Southern Region, on September 25 explained the effect of the London Area Passenger Charges Scheme on the suburban services of the Southern Region.

The scheme, the adoption of which was referred to in our September 22 issue, comes into operation on October 1 on all lines within the London Passenger Transport Area. South of the Thames this area is bounded by a line joining Windsor, Ascot, Worplesdon, Guildford, Horsham, Three Bridges, East Grinstead, Tunbridge Wells, Tonbridge, Wrotham, Meopham, and Gravesend. The Guildford-Horsham line is excluded, but the Horsham-Three Bridges, and Three Bridges-Tunbridge Wells lines are included.

Mr. Hopkins, who was supported by Mr. S. W. Smart, Superintendent of Operation, Mr. W. H. F. Mepsted, Commercial Superintendent, Mr. W. J. Tingley, Fares Assistant to Commercial Superintendent, and Mr. C. Grasemann, Public Relations & Publicity Officer, Southern Region, said that the effect of the scheme on the Railway Executive would be a reduction in revenue, though there would be an increase from users of London Transport Executive services. Southern Region suburban passengers in general would pay slightly less.

The cheap day return fare will be replaced by a new day return at 1½d. a mile. It will apply between any two stations, without restriction as to time of day. There will, however, be no inter-Regional availability through London.

A new season ticket scale will replace the present season ticket rate. This will mean, in the main, a slight reduction in the Southern Region suburban area but some existing sub-standard rates will go up to remove anomalies. The increase will be offset by doing away with the present availability of some season tickets for more than one Southern Region terminus; a holder who elects to retain this facility will have to pay slightly more. Existing season tickets will be valid until expiry, unless the holder wishes to surrender them and take out a new ticket.

The availability of the present cheap day return to several termini will also disappear, and the new day ticket will be made out to one terminus only. The experimental evening cheap tickets will no longer be issued. Workmen's tickets will cease and their place taken by a new cheap early morning return, to which the present shift workman's ticket facility will apply.

Mr. Smart said that it was impossible to foresee what effect the new scheme would have on the suburban loadings of the Southern Region, particularly as the London Transport Executive fare structure was being amended at the same time. There might be significant transfers of passengers from the Southern Region to the London Transport Executive services and *vice versa*. A close watch would be kept on the situation, and the services adjusted if necessary.

A decision on the ramblers' " go-as-you-please " tickets is still awaited, but Mr. Hopkins thought that the present facility enabling passengers to travel out to one station and return from a station equally or approximately equally distant from London on another line would be preserved, although a slight excess payment might be made.

BROOM & WADE LIMITED.—The directors of Broom & Wade Limited propose to increase the nominal capital to £1,000,000 by the creation of 2,400,000 5s. shares. It is also proposed to distribute £250,000 among ordinary stockholders. A million ordinary 5s. shares will be allotted to ordinary stockholders in the proportion of one new 5s. share for every 5s. unit held. The balance of the new capital will be at the disposal of the directors.

OFFICIAL NOTICES

ASSISTANT WORKS MANAGER required with experience heavy engineering and timber construction. Position offers good prospects for satisfactory man. Apply with full particulars, training experience and salary required to the Managing Director, THE BIRMINGHAM RAILWAY CARRIAGE & WAGON CO. LTD., Smethwick 40, Staffs.

MANUFACTURERS of specialised precision product have vacancy as sales engineer. Applicants must have good education and personality and should have railway experience, covering either construction or operation of railway locomotives or carriages. Preference given to applicants under 40. Salary according to qualifications. Apply, giving details of education and experience, to Box 855, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth. 8½ in. by 5½ in. 82 pp. Diagrams. 5*s*. By post 5*s*. 3*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

JUNIOR Assistant Sectional Engineer or Sectional Engineer required for British Railway Company operating Chile and Bolivia. Candidates should have passed Sections (A) and (B) of Institute of Civil Engineers examination and have had some experience in maintenance and construction of track work, bridges and buildings. Aged about 25/35 years, married or single. Commencing salary £600/£750 p.a. according to qualifications and experience. Free quarters, passages, allowances, etc., provided. Applications with full particulars of qualifications and experience and copies of any testimonials held to be sent to Box 3679, c/o CHARLES BARKER & SONS LTD., 31, Budge Row, London, E.C.4.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiments. Eight single-acting cylinders with rotary valves. An application of the principles of the Willans central-valve engine to the steam locomotive. By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. Price 2*s*. Post free 2*s*. 3*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

SITUATION VACANT.—District Traffic Superintendent. Salary £1,000 per annum. Knowledge of Spanish essential. Apply to Secretary, THE PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

SITUATION VACANT. ENGINEERING ASSISTANT, Permanent Way Department, Central Railway, Peru. Salary from £1,000 per annum. Knowledge of Spanish essential. Apply to Secretary, THE PERUVIAN CORPORATION, LIMITED, 144, Leadenhall Street, London, E.C.3.

GLOSSARY OF WOOD. A technical dictionary for all associated with timber and its uses. Ten thousand terms about timber—the common and the little known, the old and the new. Ten thousand definitions covering the entire field of timber and its uses—growth, marketing, utilisation. The commercial timbers, their qualities and uses, tools and woodworking equipment, are all here explained simply, concisely and accurately. Illustrated by many clear line drawings. Price 21*s*. net. By post 21*s*. 9*d*. Tothill Press Limited, 33, Tothill Street, London, S.W.1.

Notes and News

Sales Engineer Required.—Manufacturers of specialised precision product have vacancy for a sales engineer with railway experience. See Official Notices above.

British Transport Officers' Guild.—As from today, September 29, the address of the British Transport Officers' Guild will be Finsbury Court, Finsbury Pavement, London, E.C.2.

Stewarts and Lloyds of South Africa Limited.—It is announced that the total outstanding 3½ per cent. debenture stock of Stewarts and Lloyds of South Africa Limited is to be redeemed at 102 per cent.

Vacancy for Sectional Engineer in Chile.—A junior assistant sectional engineer or sectional engineer, between 25 and 35 years of age, is required for a British railway company operating in Chile and Bolivia. See Official Notices on this page.

Diesel Locomotive Productivity Report.—Because of printing difficulties, publication of the report of the British diesel locomotive manufacturers' productivity team on its visit to the U.S.A., which was the subject of an editorial note in our April 28 issue, has been postponed and the report will appear about the middle of October.

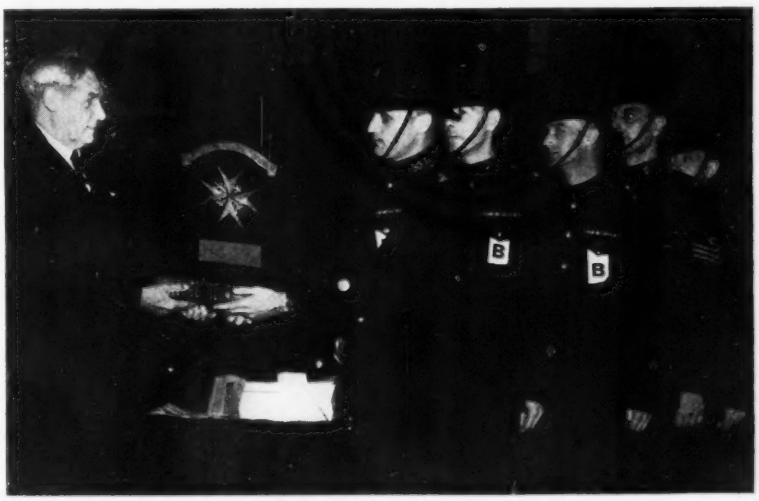
Permanent Way Institution (Irish Section) Summer Meeting.—The annual summer meeting of the Permanent Way Institution (Irish Section) was held in Dublin on August 26. Mr. C. H. Slater, Vice-President for Ireland, presided. There were 91 members present. After the routine business had been dealt with, Mr. D. S. Alley, Permanent Way Assistant, London Midland Region, British Railways, spoke on "Measured Packing." He began with a short resume of the history of chip packing from its inception on the L.N.W.R. and the inauguration of measured shovel packing on the L.M.S.R. He then described the use of voidmeters and sighting boards and with the aid of a film, lent by the Western Region, the whole procedure adopted with this type of packing was described in detail. Thanks were accorded to Mr. Alley by Messrs. Lloyd and Musgrave and passed with acclamation. The secretary announced that Messrs. Cahill and Donovan of the Cork District, Coras Iompair Eireann, had obtained diplomas at the recent Permanent Way Institution examinations. The arrangements for the remainder of 1950 were announced and the meeting then terminated. Earlier in the afternoon, a demonstration of measured shovel packing was given on the permanent way at Amiens Street Junction by Ganger P. Mahon, Portmarnock, G.N.R.(I.).

Institute of Transport Graduateship.—For the most outstanding performance in 924 entries in the Institute of Transport Examination of 1950, Mr. Ronald A. Palmer, of the Regional Staff Office, British Railways, York, has been awarded a cheque for £20 in addition to his Honours certificate. He will receive his prize in London in October from the retiring President of the Institute of Transport, Sir Osborne Mance.

B.T.C. Police First Aid Competition.—Lord Hurcomb, Chairman of the British Transport Commission, presented the prizes at the second annual first aid competition of the British Transport Commission Police, which was held in London on September 14. The London Area, represented by a team from Liverpool Street, was placed first among the six teams competing, with the Midland Area's Preston team second, and the Northern Area's Darlington team third. The members of the Liverpool Street team, who received the Sir Bertram Ford Challenge Trophy, were P.C. Andrew Murphy (Captain), P.C. Robert Cresswell, P.C. Anthony Graham and P.C. John Fooley. The championship trophy was presented by the St. John Ambulance Association, under whose ægis the competition was held. Sir Harold Scott, Commissioner of the Metropolitan Police, presided at the prize-giving. Mr. W. B. Richards, Chief of Police, British Transport Commission, was also present.

Roofing for Birmingham New Street Station.—Work is about to be continued on the renewal and repair of the roofing and supporting steelwork of Birmingham New Street Station. When this section is completed it will mark the end of the main re-roofing programme, and the only outstanding work remaining will be between the Midland and North Western side and the Fish Dock.

Derailment in Eastern Pakistan.—Fifty persons were killed and fifty injured when an express train was derailed on September 8, while crossing the bridge between Bhairab Bazaar and Daulatkundi, about 40 miles from Dacca. The train had left Dacca at 9.30 for Chittagong. At about midnight the engine and three coaches left the rails after an explosion and fell into the river below. The engine was badly damaged and the driver was killed instantly. The fireman escaped with minor injuries by being thrown out into the water. Sabotage is suspected, as four fish-



Lord Hurcomb, Chairman of the British Transport Commission, presenting the championship trophy to the winning team in the B.T.C. Police first aid competition (see paragraph above)

plates and two bolts were found by police in the water near the bridge.

Craven Bros. (Manchester) Ltd.—An interim dividend of 5 per cent. is to be paid by Craven Bros. (Manchester) Ltd., as for the previous year.

Tunnel Collapse in Japan.—A tunnel recently caved in, burying alive some 50 workmen, on the Government Railways near Matsutopmura, 130 miles from Tokyo.

Tilling-Stevens Reorganisation.—At an extraordinary general meeting on September 4 of Tilling-Stevens Limited, approval was given to the company's capital reorganisation and to the agreement with Commer Cars Limited, the commercial vehicle division of the Rootes group. The latter now hold the whole of the ordinary stock of Tilling-Stevens.

Frozen Food Insulated Containers.—A recent innovation on British Railways was the introduction of frozen-food insulated containers between Dublin and London. They are designed to carry all kinds of perishable goods. The first consignment, for which 12 containers were required, was 25 tons of garden peas. This is a new type of traffic, and as delivery can be effected in London within two days of loading in Dublin, the service should prove popular.

Clearer Route Signs on London Buses.—London Transport is to revert to pre-war practice by devoting separate indicator panels on new buses to destination, route number and intermediate stops. Since the war, shortages of linen have made necessary a restricted display of this information. A start has already been made on the latest green country service vehicles, and the first red central area buses to be so equipped will be those which, on October 1, replace trams in the first stage of the tram conversion scheme. As post-war vehicles already in service pass through overhaul, they also will be equipped with the new blinds; a decision has still to be made regarding further acceleration of this programme, but shortage of linen makes it impossible to treat the older vehicles in this way.

Indonesian Rolling Stock Orders.—An agency report states that the Indonesian Railways have ordered 100 third-class passenger carriages and 1,000 goods vans in Holland, and 100 locomotives in Germany. In Holland, the order will be carried out by Werkspoor, Beynes and Allen & Company. The locomotives will be built by Krupp, Essen. Delivery will be made next April. The 1,000 goods vans will increase the Indonesian Railways rolling stock by 7 per cent.

Railwaymen and Road Safety.—The results of British Railways, Scottish Region, entries for the 1949 National Safe Driving Competition organised by the Royal Society for the Prevention of Accidents show that only 80 per cent. of the eligible staff engaged in horse and motor cartage completed the full year free from accident on public roads. Nearly 1,000 members of the Scottish Region staff have qualified for awards covering periods of from one to fifteen years safe driving, and most of the men are concerned in movement through congested streets in the principal town centres.

Equipment Displays at the Commercial Motor and International Motor Shows.—A new design in heavy duty compressed-air and vacuum windscreen wipers and completely redesigned direction indicators will be amongst the exhibits of Trico-Folberth Limited at the Commercial Motor Transport Exhibition at Earls Court from September 22-30. For the International Motor Exhibition (also at Earls Court) from October 18-28 the Trico display will emphasise powerful air horns, Trico screen washers, direction indicators and switches, and Trico wiper equipment generally and new lines. At both shows Trico products will be seen in original equipment on British and U.S.A. private cars and commercial vehicles exhibited by both vehicle manufacturers and coach-builders.

London Transport buses showing (left) the restricted wartime type of indicator panel and (right) the new type (see paragraph above)

Victoria Hotel Sold to Government.—After prolonged negotiations Gordon Hotels Limited have agreed to sell the Hotel Victoria, London, which has been under requisition since 1940 to the Government for approximately £700,000.

London Factory of Precision Screw & Tool Manufacturers.—The Precision Screw & Tool Manufacturers, of Pontypridd, has opened a new branch factory at Prince of Wales Terrace, Chiswick, London, W.4, under the supervision of Mr. C. Jarvis as Works Manager.

B.V.C. Industrial Constructions Limited.—The British Vacuum Cleaner & Engineering Co. Ltd. announce the change of address of its subsidiary, B.V.C. Industrial Constructions Limited, from Africa House, Kingsway, W.C.2, to Terminal House, 52, Grosvenor Gardens, London, S.W.1.

Distribution of Mexican Railway Company Funds.—The scheme for the distribution of the remaining assets of the Mexican Railway Co. Ltd., details of which were given in our issue of August 25 last, has been approved by the holders of all classes of loan capital and of the share capital stocks. Subject to the sanction of the High Court the distribution of funds will follow in due course.

South African Tourist Office Opened in London.—The High Commissioner of the Union of South Africa, Dr. A. L. Geyer, recently opened the new London office of the South African Tourist Corporation at 70, Piccadilly. Also present at the opening of the office was the Union's Minister of Transport, Mr. Paul O. Sauer, who is responsible for "Satour," as the Corporation is generally known, to the South African Government.

Electrical Equipment at International Motor Exhibition.—The British Thomson-Houston Co. Ltd. is exhibiting several types of magnetos, impulse starters, and electric speed indicators for engines at the International Motor Exhibition, which opens at Earls Court, London, on October 18. B.T.H. exhibits for garages and workshops will also include items of control gear and electric motors of fractional horsepower and industrial sizes. An exhibit of Mazda bulbs for vehicles will include those for head, side, tail, and stop lights, dashboards and direction indicators.

Oxy-Acetylene Welding and Cutting Equipment at Earls Court.—A complete range of welding and cutting equipment, including DH and CH general purpose blowpipes and Cutogen hand cutters and combined welding and hand cutting blowpipe, will be displayed by the British Oxygen Co. Ltd. at Earls Court at the Commercial Motor Show from September 22-30 and at the International Motor Show from October 18-28. Other B.O.C. exhibits will include: Oxy-acetylene lead burning outfits with Model O light-duty blowpipe; a cutting bench with a portable straight-line and 36-in. profile cutting machines; portable welding outfits; rods and fluxes for welding, building up, and hard facing; and equipment obtainable under the Service Exchange System. The Argonarc Process will be featured using a Mark III water-cooled torch and CPU 300Q transformer. Demonstrations will be given on various metals and alloys.